

# MANUFACTURERS' RECORD

A WEEKLY REVIEW OF THE IRON, STEEL, METAL & HARDWARE TRADES.

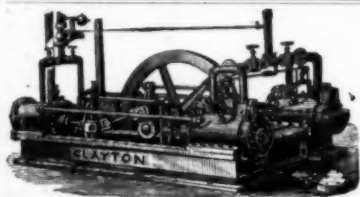
AND A MANUFACTURING AND TEXTILE PAPER, DEVOTED TO THE UPBUILDING OF SOUTHERN MANUFACTURES AND THE DEVELOPMENT OF THE MATERIAL RESOURCES OF THE SOUTH.

WEEKLY.  
\$3.00 PER YEAR.

BALTIMORE, MAY 10, 1884.

NEW SERIES,  
VOL. V. No. 13.

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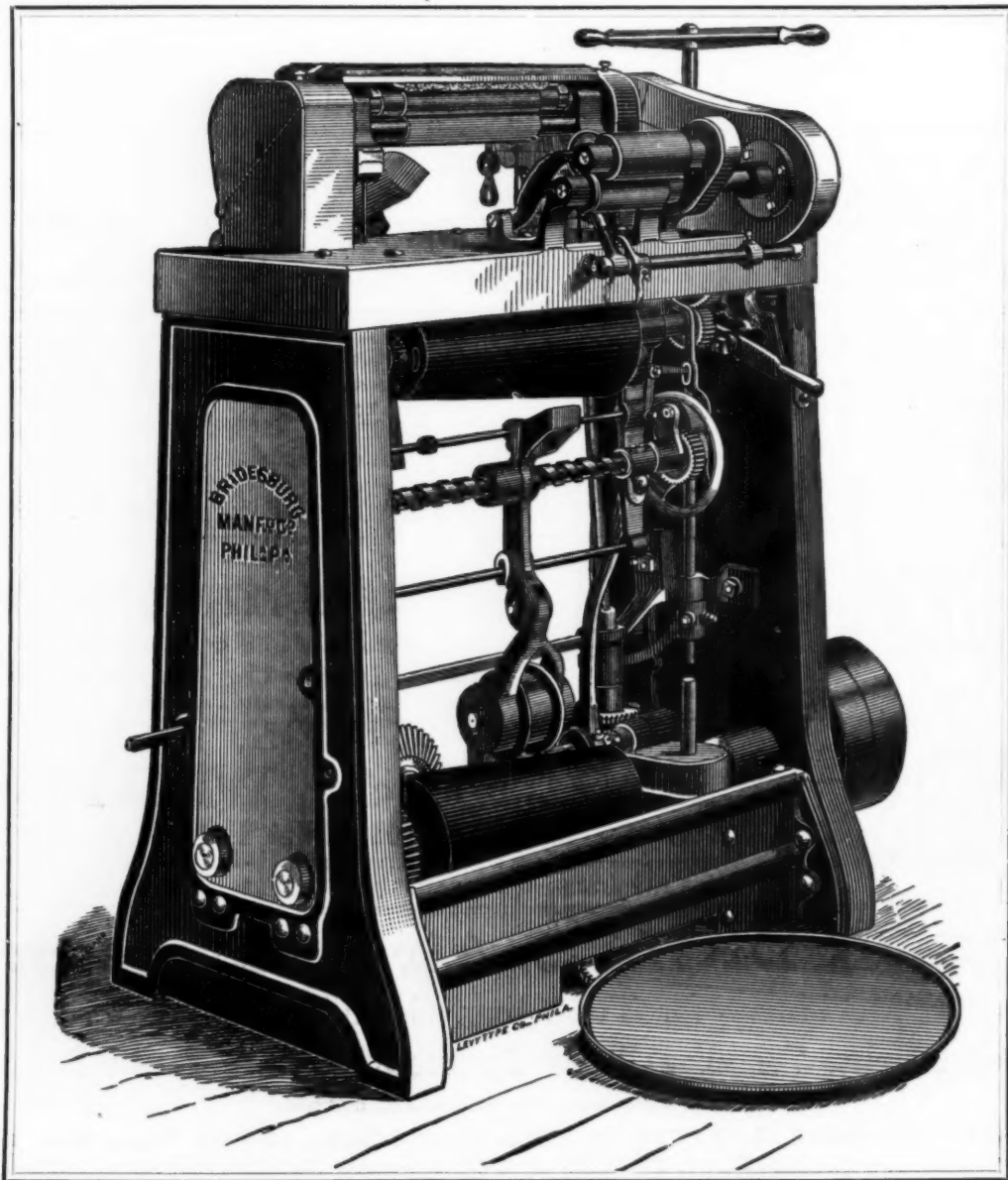
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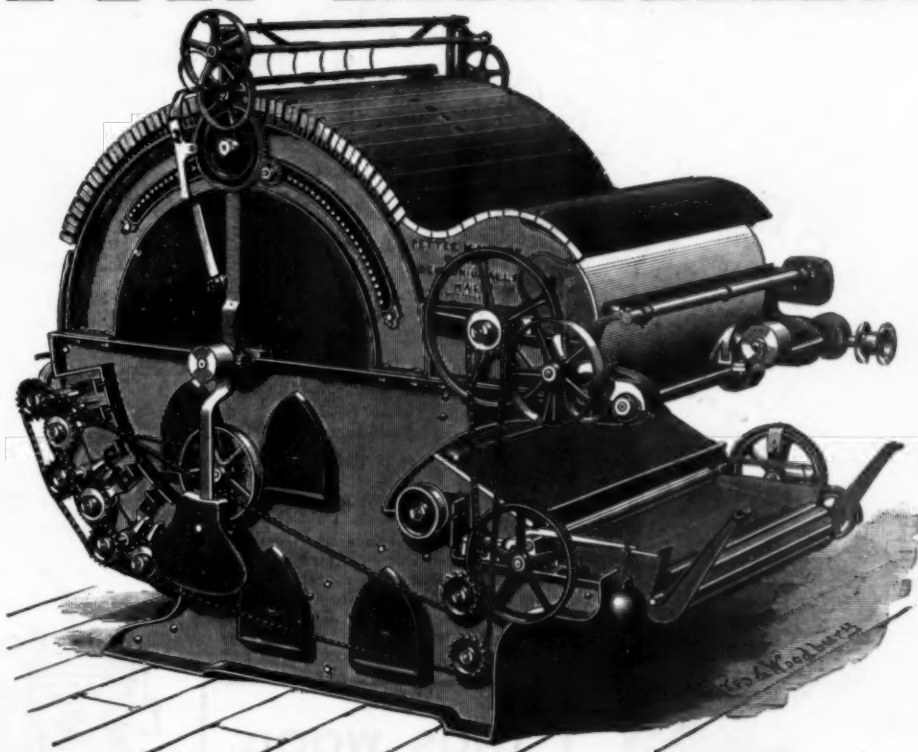
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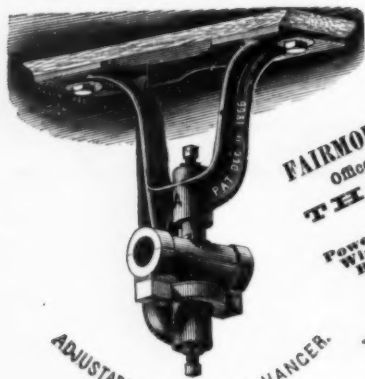
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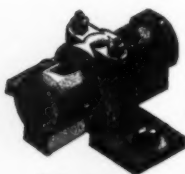
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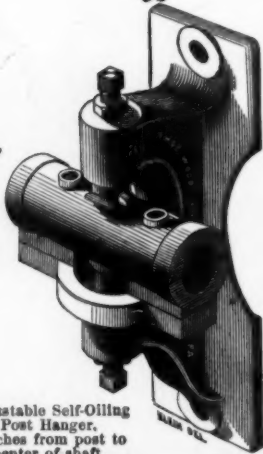
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Adjustable Self-Oiling  
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6 inches from post to  
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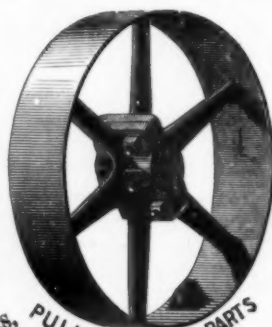
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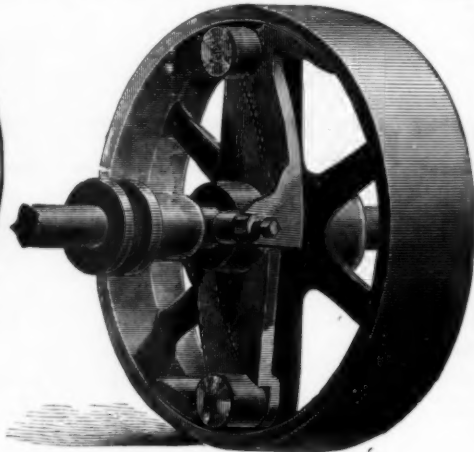
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Pulleys in two parts, any size required.  
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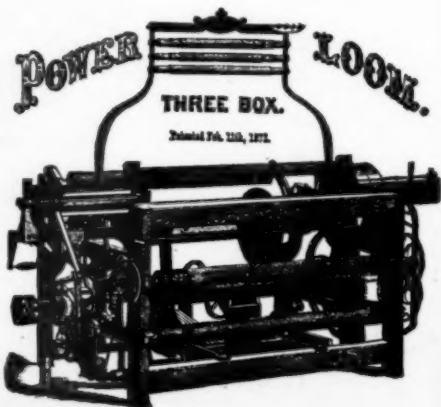
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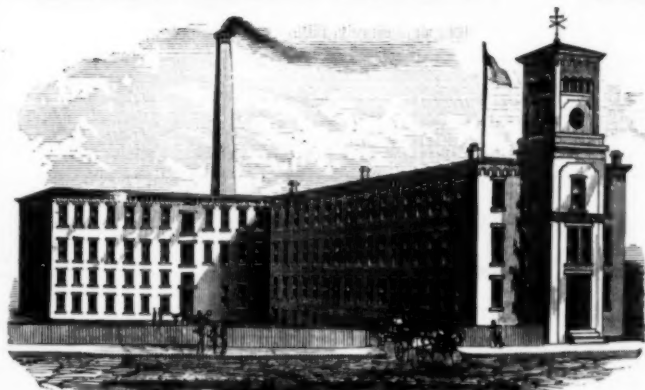
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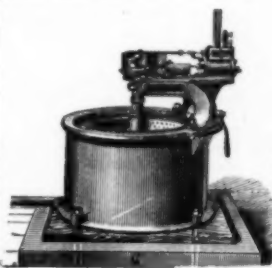
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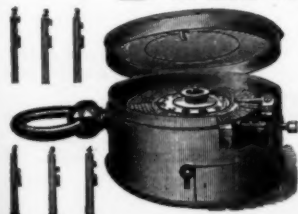
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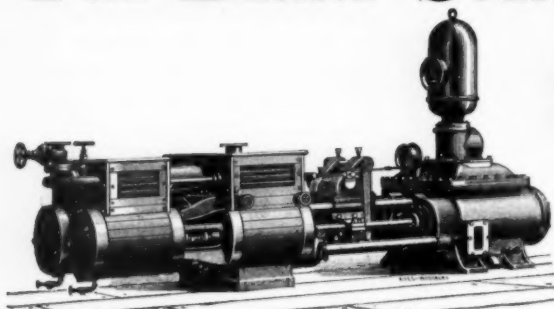
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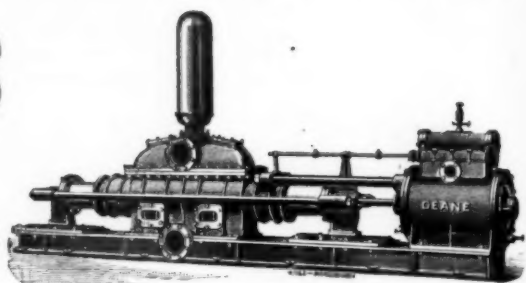
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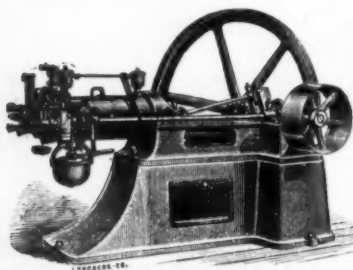
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## LOWELL CARD CO.

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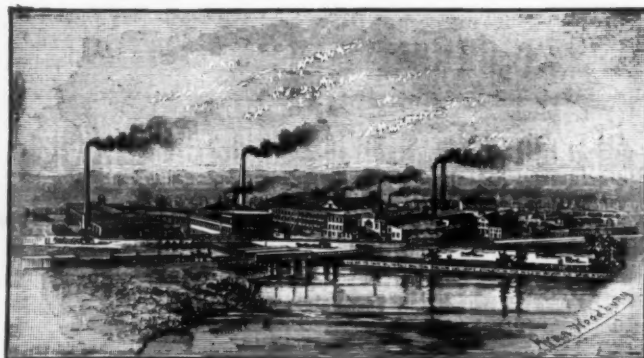
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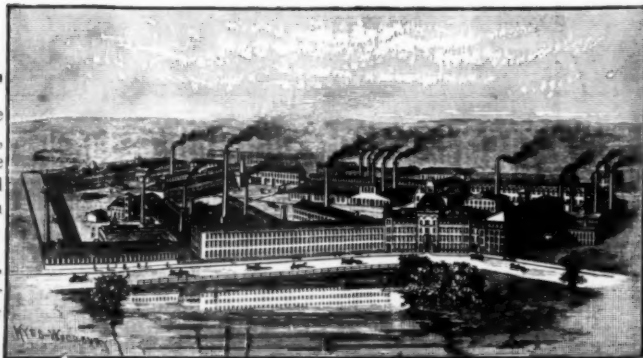
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BALTIMORE, MAY 10, 1884.

Our readers will confer a favor upon our advertisers and upon us, as well as benefit themselves, if, whenever they write to anyone advertising in this paper, if it is only for a catalogue, they mention that "your advertisement was seen in the BALTIMORE MANUFACTURERS' RECORD." A careful compliance with this request will be much appreciated.

## Fifty-five Million Dollars.

What the South has Done in Four Months.

On March 8th we published a summary of the amount of capital of all new manufacturing and mining enterprises inaugurated at the South during the first two months of 1884, and the amount expended in the enlargement of mills and factories already established. The total footed up \$28,300,000, Kentucky heading the list with \$6,851,000, followed by Alabama with \$5,210,000; Virginia with \$3,830,000, and Texas with \$3,593,000.

We come now to the last two months—March and April. And the record for that period shows that there is no falling off in the marvelous amount of money that is being put into new enterprises at the South. It is true that there is a small difference in the aggregate, and that the States do not hold the same relative positions as for January and February; but the change is too small to be of any practical importance. The amount invested in each State is as follows:

Alabama.....	\$ 5,972,000
Virginia.....	5,555,000
Kentucky.....	5,069,000
Texas.....	2,484,000
Tennessee.....	2,118,000
Florida.....	1,396,000
North Carolina.....	961,000
West Virginia.....	845,000
Georgia.....	760,000
Louisiana.....	730,000
Maryland.....	499,000
Arkansas.....	375,000
Mississippi.....	315,000
South Carolina.....	255,000

Total.....\$ 27,204,000

Thus the amount for March and April was \$27,204,000, which added to the aggregate for January and February gives a grand total for the first four months of 1884 of \$55,504,000. In the four States, Alabama,

Virginia, Kentucky and Tennessee, which stand out so prominently in the above list, the heaviest investments of capital have been in coal mining and iron manufacturing companies, though a considerable portion of this capital has, of course, gone into various other industries, such as cotton and woolen mills, flour mills, saw mills, machine shops, &c. In Alabama, more than in any other State, the inauguration of new industries has been in heavy mining and pig iron making enterprises. Virginia, while following in the same line, shows a wider diversity of industries. Tennessee has been favored with several heavy coal and iron enterprises that have helped largely to make up the aggregate amount for that State, but there has also been a remarkable number of smaller industries, such as machine shops, saw mills, wood-working and turning factories, established. Texas, although producing more cotton than any other State, makes no advance as a cotton manufacturing centre, her new industries being mainly composed of large machine and agricultural implement works, cotton-seed oil mills, flour mills, saw mills and similar enterprises.

Florida has taken a decided advance in manufacturing enterprises, and of late has displayed unusual activity in the establishment of big saw mills, machine shops, numerous ice factories, &c., while North Carolina is forging ahead with remarkable spirit. The apparent fondness of North Carolinians for small industries and many of them, as opposed to a few large ones, is somewhat remarkable. There are more cotton mills in that State than in any other in the South, and yet, with few exceptions, they are small as compared with Georgia and South Carolina mills; and so it is in other branches of manufactures. Factories are increasing by the dozen, but most of them are of moderate capacity. Perhaps this is a wise course: great oaks from little acorns grow. South Carolina is lagging behind, despite the great advance made during 1881, 1882 and 1883, and the number of new enterprises started in that State since Jan. 1 is quite small when compared with what North Carolina has done. North Carolina is undoubtedly reaping a rich harvest from her exhibition at Boston last year. Possibly South Carolina may need the same kind of advertising of her marvellously great resources.

Summing up the total investments by States since January 1st, we have:

Kentucky.....	\$ 11,930,000
Alabama.....	11,182,000
Virginia.....	9,385,000
Texas.....	6,977,000
Tennessee.....	2,964,000
Georgia.....	2,594,000
Maryland.....	2,514,000
North Carolina.....	2,188,000
West Virginia.....	1,761,000
Florida.....	1,286,000
South Carolina.....	1,159,000
Louisiana.....	1,030,000
Arkansas.....	867,000
Mississippi.....	597,000

Total.....\$ 55,504,000

Among the new cotton mills represented in the foregoing figures are the following:

Location.....	Proposed cost.....
Columbia, Tenn.....	\$175,000
Durham, N. C.....	300,000
Trenton, Tenn.....	50,000
Dalton, Ga.....	80,000
Crisfield, Va.....	84,000
Rossmore, Va.....	300,000
Rome, Ga., enlargement.....	100,000
Columbus, Ga.....	700,000
Columbus, Ga.....	300,000
Darlington, S. C.....	300,000
Newberry, S. C.....	300,000
Rockingham, N. C.....	100,000
Yadkin Falls, N. C.....	100,000
Nashville, Tenn., enlargement.....	100,000
Mountain Island Mills, N. C., enlargement.....	100,000
Talladega, Ala.....	100,000
Knoxville, Tenn.....	125,000
Fayetteville, N. C.....	100,000
Pulaski, Tenn., enlargement.....	100,000
Lynchburg, Va.....	400,000
Augusta, Ga., Sibley Mill, enlargement.....	300,000

In addition to these there is a large number of mills increasing their machinery,—the Riverside at Danville, Va.; Adams at Montgomery; Matthews at Selma; Morgans at Laurel Hill, N. C.; Gwyn, Harper & Co., Patterson, N. C.; Athens Factory, Athens, Ga.; Charleston Manf. Co.'s mill, Charleston, S. C., and many others; while there are probably a dozen or more cotton mill projects under way, but as they have not yet been definitely decided upon, we, of course, do not mention them.

## Mr. Hurd's Ridiculous Speech.

Mr. Frank Hurd is a congressman. He is from Ohio and ought to know better than to make himself ridiculous by such trash as the following extract from his late speech:

"Oh, if I could burn into the brain of the manufacturers of America one sentence," he burst forth, "it would be this: 'Turn from this constant introspection to the nations of the world.' Down with walls! Out to the sea! There are 2,000,000,000 people who want to buy what you make. Rise up to the truth of the great thought that these immense peoples can be supplied by you with all the instruments of husbandry and the tools of artisanship. But they will not take your goods unless you take theirs. Let your tariff disappear and then, O manufacturers! your attention will be diverted from home markets to generous rivalries in foreign trade, in which a wealth will come to you of which you do not dream to-day."

If it is true that foreigners "will not take our goods unless you (we) take theirs," it follows as a natural sequence that they will take our goods if we take theirs. Is this so, however? Turning to the last report of the Bureau of Statistics we find some interesting figures, the study of which might have saved Mr. Hurd from making himself ridiculous.

For the fiscal year ended June 30, 1883, we imported from the West Indies \$65,544,534 worth of merchandise, and, of course, according to Mr. Hurd's theory, since we took their goods, they, of course, must have taken ours in the same proportion. But unfortunately for his position, the West Indies purchased from us only \$15,103,703 of merchandise, or less than one-fourth as much as they sold to us. Is that an exceptional case, however? Well, there is Brazil, a country to which our manufacturers are so persistently advised to export their goods. In 1883 Brazil sold us \$44,488,459 of her products, but she bought of us only \$9,252,094. Then there is China, a country of teeming millions; she sent us last year merchandise to the extent of \$20,141,331, but she bought from us only one-fifth as much, or \$4,080,322; while from the British East Indies we received

\$19,467,800 in merchandise, and in return sent out only \$2,185,804. Japan treated us in the same way, selling us \$15,098,890, and buying only \$3,376,434. The Hawaiian Islands enjoy the blessing of free trade with the United States, and they, of course, must prove Mr. Hurd's theory. But somehow the statistics do not show it. They very willingly sold us \$8,238,641 worth of their products, but they were content to take only \$3,776,065 of goods of all kinds from us. From the Spanish possessions, other than Cuba and Porto Rico, our imports were \$10,617,563, against the paltry sum of \$324,474 as our exports; the Argentine Republic shipped to us \$6,192,111 and bought only \$3,543,196; British Guiana sold us to the extent of \$6,437,909, and purchased from us \$2,588,589; with Venezuela our trade was—imports, \$5,901,724; exports, \$2,403,705; Central American States: imports, \$5,121,315; exports, \$2,003,467; and Peru imports, \$2,526,916; exports, \$493,894. Thus we have purchased from these twelve countries, \$209,784,013 worth of their goods, while they bought from us only \$49,131,749,—a difference against the United States of over \$160,600,000. We respectfully ask Mr. Hurd to explain this, for he tells the manufacturers of the United States that if we will only buy from these nations they will buy from us, and yet in one year our imports from them exceeded our exports to them by over \$160,000,000.

Commenting on Mr. Hurd's statement that there are 2,000,000,000 people anxious to buy of us, the Chicago Inter-Ocean says:

"Two hundred million of these people live in Africa, and wear their own hair and nothing else. Three hundred million of them live in India, and are supremely happy if they can earn four cents a day. As many more are in China, struggling to be permitted to supply their own wants, a privilege which British free trade at the point of the bayonet denies them. Our manufacturers are asked to allow their own throats to be cut in their home market, in order to crush down American labor to the point where we can undersell these barbarian foreign markets."

CORRESPONDENCE relating to the manufacturing, mining, lumbering and all other material interests of the Southern States is solicited. We invite those interested in the development of the South to make free use of our columns. Reaching so many capitalists in all parts of the United States seeking profitable investment in the South, the MANUFACTURERS' RECORD offers an excellent chance for the people in that section to place the advantages of each locality before those likely to be interested. We will take great pleasure at all times in telling what has already been accomplished in the South, and showing up the opportunities of doing still more,—so if you desire to attract immigration or capital, or if you know of an opening for profitable investment in manufacturing, mining or kindred pursuits, write us an account of it. It will be published free of cost.

## Surplus Products of Agriculture.

J. R. DODGE, Statistician United States Department of Agriculture.

Fifty years ago there was only a fourth of the present population. The wants of the larger number are now more liberally supplied than ever were the limited requirements of a more primitive mode of living. The use of labor-saving machinery and appliances has enlarged and cheapened production, and the surplus, which is sent to foreign countries, is not only four times as much as in 1830, but is thirteen times as much. The agricultural exports of 1883 were \$619,269,449, and the average has been about that figure for five years past.

Not only has there been a vast increase, but the history of this progress affords a lesson in industrial economy which farmers cannot afford to overlook. It illustrates in a striking way the necessity of the greatest possible diversity in rural industry.

Fifty years ago unmanufactured cotton comprised about 60% of the value of our exports, and breadstuffs and animals and their products, counted together, brought only a third as much. Now, while the exports of cotton in 1883 were worth nine times as much as in 1825-'30, the values of animal products and breadstuffs are thirty times as much as the surplus of half a century ago. The rapidity of the increase has, therefore, been fully three times as great as in the case of cotton. The early prominence of cotton in our exports was phenomenal. In ten States extension of this one industry became an absorbing passion, dominating agriculture, society and politics. All other agriculture was dwarfed in this section. With millions of acres of wasted pasturage, almost no wool was grown or manufactured, and clothing was bought on credit at enormous prices. With millions of acres in forests, wash-tubs and ax-helves were brought a thousand miles; a mill-log would not sell for enough to buy a hammer-handle. The cultivator employed his horses and mules during the spring and summer in killing grass, and in autumn and winter alternately in hauling out cotton and bringing in hay that had floated down the great river from the West. Hogs grew wild and multiplied in the swamps, while the thrifty merchant got 50% profit on Western bacon.

It became a cherished theory in political economy that the South should produce cotton, the West hogs, and the East "notions," and everything else should be brought 5,000 miles—from Europe. This continued until there was little produced but cotton, and much of that was mortgaged a year in advance to procure the necessities of life.

The following table, from official records of exports, presents the progress of exportation and illustrates the rapidity of increase in volume and the wonderful change in the character of the export trade:

Comparison of cotton exports with those of breadstuffs and animal products.

Years.	Cotton, unmanufactured.	Breadstuffs.	Animals and their products.
1830*....	\$ 29,674,883	\$ 7,071,767	\$ 2,533,318
1840*....	63,570,397	13,535,926	3,065,719
1850....	71,981,616	13,066,509	10,997,438
1860....	191,806,555	24,422,310	20,442,819
1870....	227,027,624	72,350,933	33,049,368
1871....	218,227,109	79,381,187	42,172,961
1872....	180,684,506	84,586,273	68,678,144
1873....	227,343,069	98,743,151	89,605,570
1874....	211,323,540	161,198,894	90,590,332
1875....	190,638,625	111,458,365	91,555,115
1876....	192,667,262	131,181,555	98,434,330
1877....	171,116,508	117,896,476	123,679,300
1878....	140,031,484	181,777,841	134,064,874
1879....	162,304,250	210,355,528	134,779,947
1880....	211,535,905	288,036,835	150,531,442
1881....	247,695,745	370,332,519	175,584,760
1882....	199,812,644	182,670,528	134,323,940
1883....	247,328,721	208,040,850	122,513,653

\*Year ended September 30.

From 1861 to 1866 breadstuffs realized more than cotton, for obvious reasons.

In 1878 the value of breadstuffs alone exceeded that of cotton. The kingly plant

had been distanced for the first time in a fair race. The wants of the stomach were greater than those of the back. In the three following years similar superiority in the exports occurred. The bad harvests of 1881, reducing products and raising prices temporarily, changed the relative values of these classes of exports for two years past. So we may say that while cotton brought four times as much foreign exchange as was obtained from grain fifty years ago, grain is now a more potent factor in our foreign trade than cotton, and has been worth more in exchanges for the past seven years; that is, the exports of breadstuffs have averaged \$308,431,511 per annum since 1876, and of cotton \$202,832,465. Thus either cotton or bread separately represent more than four times the aggregate values of all agricultural exports prior to 1830.

This comparison, so favorable to cereals, is no disparagement to cotton, the product of an industry which cannot be extended more rapidly except by loss in value. The experiment has been tried with disastrous results, an increase of over a million bales in a single year having reduced the value of the crop \$45,000,000. The extension can be profitably made only by keeping pace with the gradually increasing consumption of the world.

Up to 1860 cotton far surpassed in export values both bread and meat products, either taken separately or together, and in no year did the sum of the latter equal the value of the former. But the experience of the four years following, when the absence from rural and other industries of one or two million men, and the necessity for ample supplies of bread and meat for soldier and civilian, stimulated the invention and energy of manufacturers of agricultural implements, and furnished abundant supplies not only for camp and farm and city market, but for exportation; so that in four years of war and waste there was exported a value of \$291,074,078 in breadstuffs and \$228,912,232 in animals and their products, a surplus of bread and meat of about \$130,000,000 per annum,—a sum greater than any annual exports of cotton up to 1856. What cares a country of such resources of soil and labor for a single article of export, however kingly, which can recoup its loss in such a manner in a single decade? During this period the total export of cotton, officially reported by its customs officers, was but \$24,564,772.

Here was vantage gained which could not be lost, and we find that in the eighteen subsequent years the exports of cotton have aggregated \$3,665,910,553, while the exports of grain and animals and their products—"bread and meat"—make together a total of \$4,010,418,722.

The following statement, first of the exports of four years, and afterwards in two periods of seven years each, illustrates the cumulative force of the foreign movement of grain and provisions, which is the most remarkable ever presented in the world's history:

Years.	Cotton.	Breadstuffs.	Animal products.
1866-'69....	\$798,309,431	\$205,235,449	\$115,820,432
1870-'73....	1,447,803,864	738,800,228	514,055,620
1874-'78....	1,419,837,358	1,459,030,577	977,496,416

Total...\$3,665,940,553 \$2,403,066,254 \$1,697,372,468

Taking the values of twenty-two years, from 1861, that of the eatables exceeds the value of cotton by more than a billion dollars. Cotton may still be princely, but the realm of bread and meat is kinglier still.

The lesson which these facts teach is unmistakable. All natural resources should be utilized—the grassy glade for the dairy, the hill crest and slope for fruit, the bottom lands for corn, tillable uplands for various crops in rotation, and no great district should be restricted to one product, whether cotton or wheat. Such restriction will in one generation lead to poverty of land and people. All natural resources

should be realized,—the underlying ore, the coal, lime, kaolin, building stone, salt springs, beneath the soil, as well as the soil itself. This use of nature, so varied and comprehensive, can alone secure the full utilization and productiveness of labor and the highest averaged wealth and culture.

We are in receipt of a very interesting pamphlet of the Cape Fear and Yadkin Valley Railway, with a description of Wilmington and North-western North Carolina. This road is being steadily pushed on into new territory and opening up new sections of great undeveloped wealth. It is now in contemplation to extend it on to Cincinnati, and the advantages to be gained by this move are of such vast importance not only to the road itself, but to the entire State of North Carolina, as well as to a considerable portion of Virginia and Kentucky, that there should be no trouble in securing all the money needed.

ITEMS of news relating to the progress of Southern towns, to the condition of manufacturing and mining industries, and in fact to whatever pertains to the advancement of the South, are solicited. If our readers will send us an occasional postal card or letter telling of everything new in industrial matters in their section, the favor will be appreciated.

## List of Patents.

The following patents were granted to citizens of the Southern States, bearing date April 29, 1884. Reported expressly for this paper by Louis Bagger & Co., mechanical experts and solicitors of patents, Washington, D. C.

- 297,737. Adams, W. T., Baltimore, Md. Ash-sifter.
- 297,554. Arthurs, Nicholas, New Orleans, La. Process of and apparatus for the treatment of ramie and jute.
- 297,742. Baldwin, G. E. D., Baltimore, Md. Machine for husking, silking and cutting corn.
- 297,915. Burgess, W. H., Rich Square, N. C. Cotton press.
- 297,569. Casey, Wm., Algiers, La. Gage-cock.
- 297,918. Curd, J. J., Rockfield, Ky. Churn.
- 297,773. Ferguson, W. J., Baltimore, Md. Gas pump.
- 197,595. Gray, W. B., May, Texas. Mechanical power.
- 297,689. Hedgecock, James, Bradford, Tenn. Wagon-brake.
- 297,607. Kinzel, G. J., Knoxville, Tenn. Railway-track cleaner.
- 297,940. Klar, Jacob, Rodney, Miss. Desk.
- 297,941. Kosiol, Oswald J., Louisville, Ky. Screw-cutting die.
- 297,615. Marty, J. M., Clarksville, Ark. Ejector.
- 297,824. McAfee, J. C., Dallas, W. Va. Nut-lock.
- 297,619. Moss, J. L. & W. Littell, Rome, Ga. Machine for forming oil cakes.
- 297,628. Piersol, George W., Parkersburg, W. Va. Combined corn-planter, potato-planter, potato-digger, and cultivator.
- 297,713. Pool, Jno., Elizabeth City, N. C. Shutter-worker.
- 297,848. Riggs, Wm. A., Sr., New Orleans, La. Process of and apparatus for defecating can-juice.
- 297,635. Romans, J. B., Nashville, Tenn. Turning lathe.
- 297,864. Smither, W. M., Keene, Ky. Trace carrier.
- 297,859. Smith, C. R., Okolona, Miss. Bale-tie.
- 297,725. Stansbury, A. D., Colliers, W. Va. Spring motor.
- 297,730. Toglio, Peter, Charleston, S. C. Fire-resisting weather-boarding.
- 297,649. Ward, Chas., Charleston, W. Va. Water-tube steam generator.
- 297,890. Welsh, Rozia W., Baltimore, Md. Roller mill.
- 297,912. Winfree, W. A., Elizabethton, Tenn.—Heating stove.
- 297,904. Witherspoon, Frau', Paris, Tex. Wind-mill.
- 297,736. Wood, W. E., Houston, Tex. Tongue.
- 297,908. Wycough, M. A. R., Batesville, Ark. Adjustable frame for harness.

## An American Exhibition in London.

[From the New York Herald.]

Arrangements are on foot, it appears, for a very comprehensive exhibition of American products and manufactures, to take place in London in 1885. \* \* \* The fact is that America has never made a favorable showing at any of the foreign exhibitions. In London and Paris we made comparatively light displays, our railroads not exhibiting at all, and in Vienna our efforts were not commendable, and were rendered abortive by the conduct of the American department. At Amsterdam last year we were represented only by a few sewing machines and parlor organs.

It has been seen, however, at the Centennial and the Atlanta exhibitions, and at the fisheries exhibition in London, in 1883, that there is almost no department, natural or artificial, in which America cannot offer an exhibition that shall be generally attractive. This is particularly the case in the magnificent show of natural products which can be organized by our great railroad trunk lines, and which would be entirely new to London or any other European capital. It is to be hoped the American exhibition will make a liberal display in this direction as an encouragement to the emigration of the better class of English farmers, very few of whom have yet come to this country, and who would better themselves by coming, besides being very desirable citizens.

[That such an exhibition, if properly supported by Americans and conducted by the right men, would be of great value, admits of no question.—It is the right scheme, but it is essentially important that it should have the right management. An exhibition of this character might be made of immense advantage to American manufacturers, and to the Southern States especially it could be of much importance, but before we can commend it to the public it would be well to know in whose hands it is to be placed and who is to manage it.—If it is simply a money-making scheme without any proper financial backing, the less support it receives the better; but if properly planned and in the proper hands, it deserves the aid of all manufacturers.—Editor MANUFACTURERS' RECORD.]

A new coal machine was recently patented in England, and tried in the Rainton collieries, North Durham, with very satisfactory results. It is a simple hydraulic wedge, inserted about three feet in the coal and a force of 360 tons is exerted, causing the coal to fall quietly, saving a large percentage of waste coal, for in this instance the coal came down in huge blocks, and, what is more important, without danger to life and limb. The adoption of this invention will do away with the use of powder and like explosives, and thereby be the means of preventing the sad loss of life that so frequently occurs in the mines of Great Britain. This invention is better than the lime cartridge that has of late been introduced, inasmuch as it does not require so much time to bring the coal down, and its utility is demonstrated by the fact that one man can easily move the machine from one part of the mine to another.

BALTIMORE is one of the most noted wheat and flour markets on the continent. Its flour has a world-wide reputation, so made by a rule of classifying wheat in strict regard to merit. By this rule Southern wheat classes higher than any other, and as a consequence takes preference among purchasers, and as a flour-producing wheat has the lead.—Tribune, Knoxville, Tenn.



BERRYMAN PATENT FEED-WATER HEATER—FIG. 2.

### The Berryman Patent Feed Water Heater and Purifier.

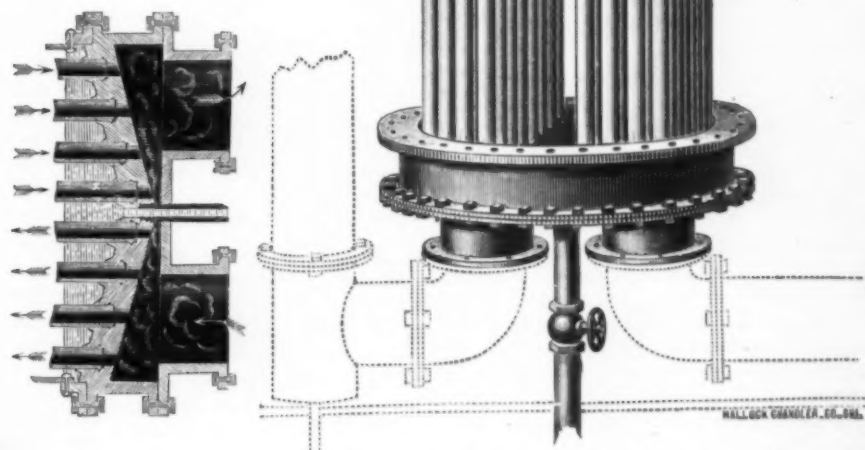
The accompanying illustrations show the Berryman Patent Feed Water Heater and Purifier, an invention of Mr. R. Berryman, of Hartford, Conn., which has been in use since 1872, the manufacturers being Messrs. I. B. Davis & Son, Hartford, who

are also patentees and manufacturers of I. B. Davis' Economic Boiler and Tank Feed Pump. The object of this feed water heater and purifier is, by the utilization of exhaust steam from the steam engine to heat the water intended to supply the boilers at a uniform temperature of 200 to 210° Fahr., and to free the water from all impurities except salt, sulphate of lime and such other acids as can only be got rid of

by evaporation. Every practical engineer in charge of steam boilers is acquainted with the economical advantages of feeding boilers with water at boiling point, and with the necessity of having that water as free from deleterious substances as possible, because of their injurious effects upon the boilers. This is accomplished by the use of the Berryman Patent Feed Water Heater and Purifier, of which, it is said, there are more made than of all other classes of heaters put together in this country. Figure 1 is a view of the internal construction of the heater and purifier, the steam tubes being of seamless drawn brass:

Figure 2 is a representation of the heater and purifier complete, ready to connect.

The steam tubes have the ability to expand and contract without causing the damaging strains to which heaters that are constructed with tubes fastened in both ends are subject. By the use of the heater pure water at a maximum heat is always provided in sufficient quantity for the boilers, and all the facilities requisite for cleansing the heater are provided. In localities where the feed-water is muddy, or in any way impure, this invention is especially valuable as a purifier, independently of its heating qualities. It is also a most perfect device for heating water for dyeing vats to woolen mills, print works, hotels, hospitals, colleges, bakeries, public buildings, and all places where pure water is important and necessary. Further information can be obtained from Messrs. I. B. Davis & Son, Hartford, Conn.



BERRYMAN PATENT FEED-WATER HEATER—FIG. 1.

### NEW PUBLICATIONS.

**HINTS ON THE DRAINAGE AND SEWERAGE OF DWELLINGS.** By Wm. Paul Gerhard, C. E. New York: Wm. T. Comstock.

The amount of sickness and the number of deaths due directly to defective plumbing and improper drainage would be appalling if known. The aim of the present volume is to set forth the evils of bad drainage and sewerage, and to point out the remedies. The common faults of sewers, waste pipes, sinks, etc., are described in language readily understood, and are illustrated by numerous diagrams. It is a book intended not solely for the architect, builder and plumber, but for the general reader, and it should be carefully read by every householder in the land.

The author shows a thorough familiarity with his subject, and his work is an exceedingly valuable contribution to this class of literature.

**CASSELL'S FAMILY MAGAZINE** (American Edition) improves with every issue. No topic of interest is lost sight of. Such practical subjects as Household Management, Domestic Cookery, Gardening, Education, Amateur Art Work, The Family Wardrobe, Deportment and Recreation, are treated by acknowledged experts. Pure and well-selected fiction is plentifully provided, and the illustrations are profuse. Price, \$1.50 a year. New York: Cassell & Co., limited.

The United States Art Directory and Year Book contains a history of the progress of art, in its various branches, in the United States, from October, 1882, to December 31, 1883; with a descriptive list of academies, art schools, art clubs, etc., in the United States, a directory of American artists, and much other information of value to artists and those interested in art matters. Published by Cassell & Co., (limited,) New York.

MESSRS. CASSELL & Co., New York, have issued as a guide to the fifty-ninth (1884) spring exhibition of the National Academy of Design of New York, "National Academy Notes," which contains a complete catalogue of the exhibition, with 122 illustrations; personal notices of the artists whose works are represented; a brief history of the National Academy, etc.

The Cordesman & Co., Cincinnati, have sent us a photograph of their works and neighboring buildings during the recent flood. It shows the water up to the second story, and presents a vivid picture of the condition of things during that terrible time. As an evidence of the life and push of this company, it may be mentioned that within a week after the water subsided they had all damages repaired, everything in shape, and were moving along as if nothing had happened.

# CONSTRUCTION DEPARTMENT.

We publish, every week, a list of every new factory, of whatever kind, projected anywhere in the South; every railroad undertaken, and every mining company organized. This information is always fresh, and, by enabling manufacturers to correspond with the projectors of such enterprises before their supplies of machinery have been purchased, is of great value. Manufacturers will find it to their interest to read this department carefully each week.

Incorporated in San Angela, Texas.—The San Angela Water Co.; capital, \$20,000.

The branch of the United States Electric Light Co. to be organized in Atlanta, as previously reported, has been incorporated by H. J. Kimball, G. W. Adair, and others, as the United States Electric Light Co. of Atlanta; capital, \$100,000.

R. N. Robbins, Huntington, W. Va., is vice-president of the \$3,000,000 mining and manufacturing company, the organization of which was lately reported.

The Pulaski Iron Co., capital \$30,000, and the New River Zinc Co., capital \$30,000, are to be organized in Virginia soon.

Flomaton, a station in Alabama, on the L. & N. Railroad, but not a post-office, will probably be selected for big saw mill by Sowell & Co.

A flour mill is being erected at Alderson, W. Va.

The Sheffield Constructing Co., organized some time, as mentioned, to manufacture brick in Sheffield, Ala., have a capital of \$60,000. They will increase capacity of their works. Post-office, Tuscumbia Ala.

Gonzalez & Co., Pensacola, have laid foundation for their mill, to replace one lately burned.

Plans have been prepared for the \$15,000 depot to be built in Petersburg, Va., by the Norfolk & Western Railroad; previously mentioned.

A large hotel is to be built in Wilmington, N. C.

The Americus, Preston & Lumpkin Railroad, to run from Americus to Lumpkin, Ga., has been organized.

A large tobacco warehouse is to be built at High Point, N. C. Ragan, Mills & Co. can give particulars.

T. G. McCoy, Pine Bluff, Ark., will build a new mill to replace the one lately burned.

A shingle mill is to be built in Pine Bluff, Ark.

C. Prentiss and R. G. Atkinson will erect planing mill at Pine Bluff, Ark.

The Louisville Gas Co., Louisville, Ky., has been incorporated.

The Claremont Manufacturing Co., Claremont, Va., are getting their new saw and planing mill into position.

D. W. C. Lomb, of the new cotton mills, Birmingham, Ala., reports that Northern capitalists have put \$100,000 into the mill, which will be enlarged.

W. T. Cheney, B. L. Wyatt and O. L. Wyly, Birmingham, Ala., will open and work coal mine.

H. F. Debardeleben, Birmingham, Ala., has contracted for the erection of the big furnace previously mentioned.

Miles Griffiths, of Haverstraw, N. Y., expects to start paper mill at Salem, N. C.

The Harris Copper Mine and the Yancey Mine, in Graniteville county, N. C., will be largely developed.

A Cotton-Seed Oil Company, capital \$40,000, has been organized in Raleigh, N. C. Julius Lewis & Co., W. H. Hollman, and Williamson & Upchurch, of Raleigh, and several outsiders, are interested. The company will also put in phosphate machinery and manufacture fertilizers.

It is reported that Padgett & Bro., tobacco manufacturers, of Lynchburg, Va., will probably start a factory in Hickory, N. C.

A. S. Hill, Villa Rica, Carroll county, Ga., will develop a gold mine near there shortly.

Brush Electric Light Co. will probably be started in Augusta, Ga.

It is rumored that the Balcony Falls Manufacturing Co., of Balcony Falls, Va., the charter of which was reported some time ago, will build an iron furnace.

As previously reported, Fredericksburg, Va., will build water-works, and proposals are invited through an advertisement in this issue of the MANUFACTURERS' RECORD.

The Sibley Manf. Co., of Augusta, Ga., have voted to expend \$200,000 in putting 10,000 additional spindles and other machinery into their mill.

Beard, Roberts & Co., Kernersville, N. C., are putting up a five-story tobacco factory.

Phillips & Co. will build shingle mill in Hyde county, N. C. Postoffice address, Swan Quarter, Hyde county.

Chestertown, Md., has about definitely decided for water-works. Col. W. W. Taylor, of Havre de Grace, Md., will build them. Col. Taylor will probably build water-works at Elkton, Md., also.

The "Stafford Co., of Harford county," Stafford, Md., will manufacture fertilizers, do milling business, &c.

The Knoxville Woolen Mills, previously mentioned, has now been incorporated; capital \$180,000, of which \$100,000 will be used to erect and equip a new mill; the balance being for the Hiawasee Woolen Mill at Riceville, Tenn., which will be owned and operated by the new company. President, C. J. McClung; vice president, E. J. Sanford; secretary and treasurer, R. P. Gettys. Will proceed to build at once.

The Canton Co., of Baltimore, expect to build 20 miles of railroad.

Poyneer & Co. have leased large building at Westminster, Md., for making wind mills, &c.

Wm. Baker, Talladega, Ala., will build a hotel.

The hub and spoke factory to be started at Jackson, Tenn., by Clifton Dancy, S. D. Hays, and others, as mentioned in our last issue, has been incorporated as the West Tennessee Manufacturing Co.; capital \$15,000. J. H. McGlathery, secretary, and W. A. Caldwell, treasurer.

The Montgomery Soap Works, Montgomery, Ala., will hereafter be known as the Central Manufacturing Co. Capital increased to \$30,000; will manufacture soaps, axle grease, &c.

An electric light company has been organized in Paris, Ky.

John T. Patrick, Wadesboro, N. C., advertises for cypress lands suitable for certain factory purposes, and reports that a factory will be built.

There is talk of a \$10,000 hotel in Gastonia, N. C.

Alexander Mason, of St. Louis, contemplates putting up a \$30,000 flour mill in Dallas, Texas.

Conner & Co., lessees of the penitentiary, Rusk, Texas, will build new blast furnace and repair the present one.

An Ohio firm has bought ground in McKinney, Texas, for a foundry and machine shop. J. P. Dowell, McKinney, can give their name and address.

G. F. Anderson, of Niles, Mich., who has been buying Alabama coal and iron lands for development, as previously noted, has just purchased 50,000 acres of coal land through J. H. Walker and H. M. Nesmith, of Montgomery, Ala.

Messrs. Drake, Warner and Seaton, the first being reported to be connected with the Peninsular Car Works, of Detroit, have secured land and will build car works in Birmingham, Ala. Elyton Land Co., Birmingham, can give particulars.

Capt. Norman Webb, of Selma, Ala., has paid \$12,500 for a Birmingham lot, on which he has some idea putting up a factory for manufacturing horse shoes.

S. H. Berg, Aberdeen, Miss., will build Masonic Temple at that place; cost \$22,500.

S. P. Yount, of Conover, N. C., and W. S. Smith, have formed partnership to manufacture building materials, wagons, &c.

The Mississippi Manufacturing Co., Vicksburg, Miss., have secured ground for building a spoke and hub factory.

The Waco Water Co., Waco, Texas, will probably make a great enlargement of their works; have submitted plans to city officials and await their action.

The entire amount of stock for the Knoxville Cotton Mill, Knoxville, Tenn., previously reported, has been subscribed.

A \$50,000 bagging factory is reported as probable in Griffin, Ga., W. J. Kincaid being interested.

J. A. Simpson and C. H. Brown, Newberne, N. C., will build an \$8,500 school-house.

\$20,000 has been subscribed for cottonseed oil mill in Buena Vista, Ga.; \$15,000 more needed.

The lessees of the penitentiary blast furnace at Rusk, Tex., propose to manufacture car-wheels.

The Fort Worth Oil Mill and Manf. Co., of Fort Worth, Tex., capital \$50,000, was incorporated May 1st. Incorporators: D. Boaz, S. W. Lomax, W. M. Lay, G. C. Battle, John Nicols, Martin Casey and Thos. Roche.

Webster & Son, Cambridge, Md., are increasing their machinery and putting in bone-grinding machinery.

J. G. James, Cambridge, Md., will begin work on his new oyster-packing house this week.

The Queen Street M. E. Church, Norfolk, Va., will put up a new \$10,000 building.

The ice factory to be started in Raleigh, N. C., by Mr. R. J. Harris, will cost \$20,000. Work will be commenced at once.

The Ahrenbeck Oil Co., of Hempstead, Texas, and the Washington County Oil Co., of Brenham, Texas, have been consolidated, and the Brenham mill will be enlarged, new machinery, water-works, electric light, &c., put in.

The Belton Oil Co., Belton, Texas, contemplates putting up ginneries at Belton and at Temple, Texas.

Contract for the court-house at Henrietta, Texas, has been awarded to Risley, Swinburn & Strain; price, \$38,800.

Repair shop and water-works to be built at Del Rio, Texas, by Major Converse.

The Water-Works Company of Eagle Pass, Texas, will build a new reservoir.

## BURNED.

Fruit-packing house and machinery of J. S. Farren & Co., Baltimore; loss, \$35,000.

Steam mill and gin of R. H. West, Franklin, Texas.

Planing mill of L. F. Blanton, Ashland, Va.

Foundry, machine and pattern shop of the Lynchburg Iron Co., Lynchburg, Va.

The Varnum House, Arlington House and number of stores were burned May 4 at Gaineville, Fla. Will be rebuilt on a larger scale.

J. A. Bullock's Mill, near Ochlochonee, Ga.; loss over \$3,000.

WHEN the Morrison Tariff Bill was first presented we pointed out the mischief that would be wrought by such a measure if passed, and said this "tariff bill is so very absurd, and the chances of its ever becoming a law are so slim, that it seems like a waste of time and space to argue as to the folly of it. The people of this country need a protective tariff; they want it and they propose to have it; and on these three points the South—the future manufacturing centre of the world—is rapidly becoming very 'solid.' The strongest friends of protection and its ablest advocates will be found hereafter in the South."

The vote on last Tuesday, by which this bill was forever laid at rest, demonstrated the fact no such unwise scheme as this can be passed. We are particularly glad that Mr. Findlay, one of the ablest Democrats of Maryland, was found on the side of a tariff which has proved of such incalculable benefit to the business interests of the United States. The South must, if she is to continue on in her marvellous development, take a firm stand for protective tariff, and we rejoice that her people are beginning to appreciate this. The defeat of the Morrison bill will, we think, effectually put a stop to any serious tariff agitation for some time to come.

THE Baltimore City Directory, recently published by Messrs. Sheriff & Taylor, 58 North Charles street, contains all the information usually found in publications of this kind and much more besides. It contains a larger number of names and has greater accuracy than any directory of Baltimore heretofore published; gives the business address as well as residence of clerks, book-keepers, salesmen, etc., and distinguishes the names of colored persons. The price is \$4.00.

## LOCKWOOD, GREENE & CO. MILL ENGINEERS

Office, 65 Westminster St., Providence, R. I.

Carefully prepared plans, specifications and estimates furnished for the construction, equipment and organization of new mills and the revision and improvement of old.

## MANUFACTURING.

Subscribe to the *Baltimore Manufacturers' Record*. Price \$3 per year.

## BALTIMORE.

**THE Holmes Nickel Plate Co.**, North street, have received large orders during the past week from this city and the South for goods which they manufacture. They possess ample accommodations and keep a full force going to keep up with the demand.

**MESSRS. JOHN T. COLEMAN & SONS**, boiler manufacturers, Holliday and Pleasant streets, are quite busy on new and repair work, and report the outlook encouraging. They are completing a number of contracts mentioned lately in the *MANUFACTURERS' RECORD*. This firm does considerable tank work, both new and repair, for water and gas.

**MESSRS. E. J. CODD & Co.**, foundry and machine works, 255 to 261 South Caroline street, report trade as satisfactory, orders coming in for new and general repair work.

**MESSRS. R. M. SPEDDEN & Co.**, general machinists, South Broadway, are finishing the contracts mentioned in the *MANUFACTURERS' RECORD*, and have received considerable steamship work. They also have prospects for some large contracts.

**MR. F. H. FOLSOM**, millwright and mechanical engineer, No. 18 East Falls avenue, has orders for some additions for old mills, as well as new work for mills in the South. The Seldner Belt Fastener, of which he is general agent, is becoming well and favorably known.

**MR. WM. L. PETTIT**, boiler manufacturer, No. 40 York street, has just closed a contract to build a new boiler for the United States light-house tender *Holly*, and is doing repair work on the steamer *J. W. Thompson*, of the Inland and Seaboard Coasting Co., of Washington, D. C., the steamers *Armenia*, *Maggie*, and steamship *Wm. Crane* and others. He now has 50 men employed, but the indications are that he will have to increase his force.

**MESSRS. JOHN C. FROELICH & Co.**, Thames street, report their business as exceedingly active, having on hand some very large contracts. They have now, as for some time past, a large force at work.

## IN GENERAL.

**MR. JOSHUA C. COE**, No. 4 O'Donnell's Wharf, Baltimore, Md., has just received the order to set the third tubular boiler with the *Jarvis Patent Furnace* for the *Brush-Swan Light Co.*, of Norfolk, Va.

**MR. J. P. DOWELL**, of McKinney, Texas, writes us that within the last six months an oil mill, capital \$50,000, and a planing mill that cost \$15,000, had been started in that town, while an Ohio firm have bought ground for a foundry and machine shop. "So you see," he says, "our place is having a small boom in the way of manufacturing."

**MR. E. MATHER**, agent of the *Jarvis Furnace*, Harrisburg, Pa., has received orders to set two boilers for the *Steel in Flour Mills*, Steelton, Pa.

A DISPATCH from Pittsburgh says: Probabilities of a general strike of iron workers in the West, to be inaugurated June 1st, are increasing. To-day Oliver Bros. & Phillips' chill mills suspended operations, and it is said that they will not resume until the question is settled. This action is taken as an indication that the manufacturers are determined to enforce the proposed reduction. The workmen show no signs of yielding.

## How "Obstructing Trade."

The Tariff Reform League, organized on Tuesday last in this city, adopted, after considerable debate, a constitution in which occurs the following curious declaration: "The policy of taxing imports, not for revenue, but for the purpose of obstructing trade, is unsound; and well-considered but decisive action looking to its ultimate abandonment should not longer be deferred."

There was a strenuous opposition made to the incorporation of this paragraph in the new league's declaration of purposes, and it is surprising that it should finally have secured the assent of so many intelligent gentlemen. To have called attention to this uniquely absurd statement ought to have been sufficient to have at once secured its excision. When and in what country was there ever a "policy of taxing imports, not for revenue, but for the purpose of obstructing trade?" If there was such a policy, of course it would be a mere Bunsbyism to say that it was "unsound," and every man outside of the asylums for the insane would put up both hands, not for its "ultimate" but for its immediate "abandonment." The employment of loose language like this, which holds up a purely imaginary "policy of taxing imports . . . for the purpose of obstructing trade," simply befores the whole subject under discussion.

For grown men to meet together to resolve that a policy which obstructs trade should be ultimately abandoned is about as useful as though they should solemnly place themselves on record in favor of virtue, right, justice; or make any other abstract affirmation which nobody for a moment denies. But where is this policy that is being pursued "for the purpose of obstructing trade?" If Reformism means anything at all by this flaring phrase it must mean that the policy of protection, i. e. of discrimination against foreign products and manufactures and in favor of our own, by the levying of import duties, has obstructed trade. Here we have an issue of fact, and are able at once to decide it by the record. During the twenty-three years that have elapsed since the present protective tariff began its work of "obstructing trade" what has happened? Twenty-three years ago we were 30,000,000 of people; now we are over 50,000,000. Then we had 141 cities and towns of over 8,000 inhabitants; now we have 286 of such cities and towns. Then the total population of our cities was 5,000,000; now it is about 12,000,000. That is the way the policy of protection has "obstructed" the growth of our population, and retarded the development of our cities. When this terrible war tariff was enacted our coal mines produced 14,000,000 tons a year. After twenty-three years of "obstruction" they turn out 85,000,000 tons a year; or six times as much. Look at our iron product again. Before the war tariff began to "obstruct trade," it amounted to 900,000 tons of ore; to-day it foots up over 8,000,000 tons a year; almost a ninefold increase. There's "obstruction" for you! Again, in 1860, our metal industries employed 53,000 hands, consumed about \$100,000,000 worth of material, and turned out about \$180,000,000 of annual products. To-day these same industries employ 300,000 hands, consume \$380,000,000 of material, and their annual product amounts to \$600,000,000 a year. That is what comes of a policy "for the purpose of obstructing trade!" In 1860 the wood industries employed 130,000 persons; to-day they employ about 340,000, while the value of their annual product has trebled. The woollen industry employed 60,000 persons then, and now employs 160,000; while our home mills, which produced goods of the value of \$30,000,000 in 1860, now turn out an annual product worth \$370,000,000.

Finally, there is cotton. In 1860 we imported 227,000,000 yards of cotton goods; in 1881 we only imported 23,000,000 yards. There is evidently an obstruction of trade here; but whose trade is it? Why, the export trade of England. In the meantime the number of hands employed in American cotton mills has increased to 200,000, and we export over 150,000,000 yards cotton goods a year, instead of importing 227,000,000 yards as we used to do before the tariff began its fearful work of "obstructing trade."

The silk industry before the Morrill tariff employed 5,000 persons; now it employs about 35,000—seven times as many. We import no more silk goods now than we did in 1860, but our own mills, which produced goods of the value of \$6,000,000 then, now turn out a product of over \$40,000,000 yearly; and that is the way the tariff has "obstructed" our silk trade. In 1860, 12,000 persons were employed in American pottery and stoneware works; to-day about 36,000 persons are employed in this industry—three times as many. The chemical industry, which employed 6,000 persons then, now employs 30,000—a five-fold increase. In the meantime we have nearly five times as many miles of railway, and double the number of farms, yielding more than double the number of bushels of cereals, than we had before this wicked policy of "obstructing trade" was inaugurated. The wool duty has "obstructed" the production of sheep; so that, whereas we only had 22,000,000 of them in 1860, to-day we have over 40,000,000 of them; and, whereas we then produced in this country 60,000,000 pounds of wool, now we produce 240,000,000 pounds. Finally, the total of our exports has more than doubled since the Morrill tariff entered upon its appalling mission of thus "obstructing trade," for in 1860 it stood at \$400,000,000, and now it stands at about \$900,000,000.—*Boston Traveler*.

## Significance of the Cotton Exposition.

The absolute benefits of the Philadelphia Centennial celebration to the commerce and industry of the nation are beyond calculation. It stimulated every branch of human employment and gave an impetus to our export traffic that no other effort could have imparted. It is now proposed to celebrate at New Orleans the one hundredth anniversary of the first shipment of cotton from a United States port. To cotton we owe primarily the wide commercial distinction we have acquired throughout the world. In 1784 England's trade in cotton was 11,250,000 pounds consumed and manufactured. The production of cotton in the United States in that year was merely experimental, and a few bags were shipped for the first time to England.

In 1791 South Carolina produced 1,250,000 pounds and Georgia 1,000,000 pounds. In 1790 the first cotton factory in the United States was built in Rhode Island, and worked by water power attached to mule spinning. The production of the world in cotton was then only 490,250,000 pounds, produced as follows:

India . . . . . 130,000,000  
Other parts of Asia . . . . . 160,000,000  
Central and South America . . . . . 68,000,000  
Africa . . . . . 46,000,000  
Brazil . . . . . 28,000,000  
West Indies . . . . . 12,000,000  
United States . . . . . 2,250,000  
All other places . . . . . 50,000,000  
Total cotton crop . . . . . 490,250,000

The development of this great staple in the United States in 100 years has been so marvellous that in 1883 we produced 6,949,756 bales, or 3,405,070,410 pounds. Of this product we consumed at home 1,117,838,363 pounds, and exported 2,291,313,022 pounds. In other words, we retained at home nearly 33% and exported about 67%. The production of cotton in the world is now 4,000,000,000 pounds per annum, and

the United States produces 85% of this entire yield.

Let us further look at the manufacture of cotton. Great Britain, with a population of 35,000,000, makes 5,500,000,000 yards of cotton fabrics annually. The United States, with a population of 50,000,000, makes 2,150,000,000 yards per annum. The rest of the world makes 3,000,000,000 yards. Total, 10,650,000,000 yards. There are not over 73,000,000 spindles in the world to-day, Great Britain possessing 40,000,000 of this number. We sometimes hear talk of over-production. This cannot be possible. From a study of those figures it is possible to comprehend what is meant by the Cotton Centennial Exposition. It is a celebration of the most marvellous evolution in industry in the history of the world.—*Washington National Republican*.

LOUISVILLE, KY., May 1, 1884.

Editor *Baltimore Manufacturers' Record*:

DEAR SIR—We will open in this city, on May 15th, a large depot for the sale of machinery and supplies. This will prove a good opportunity for those manufacturers who desire placing their product in this market in responsible hands. Our business will be conducted as agents, and all sales will be made by us as commission merchants only.

Manufacturers contemplating making an exhibit of their products at the Southern Exposition, which opens here August 16th, may find it to their interest to place the care of such exhibit in our charge, as we propose making an extensive show of a full line of machinery and necessary supplies. KENTUCKY MACHINERY CO.  
W. W. DRUMMOND, Sec'y.

PARTIES needing reliable flower or vegetable seeds should write for the catalogue of W. Atlee Burpee & Co., seedsmen, Philadelphia, Pa. They are making special offers of packages containing from 10 to 30 varieties for 25 and 50 cents and \$1. Their seeds are warranted first-class in every respect, and their prices are remarkably low. For particulars send for their catalogue.

## BRASS.

ROLL AND SHEET BRASS.

Brown & Sharpe's Gauge the Standard.

New List, Jan. 17, 1884.

Dis 10/30 %									
COMMON HIGH BRASS.									
Wider than	10	12	14	16	18	20	22	24	26
and including	10	12	14	16	18	20	22	24	26
To No. 20, inclusive.	.21	.22	.23	.25	.27	.29	.31	.33	.35
Nos. 21, 22, 23 and 24.	.23	.24	.25	.26	.27	.28	.29	.30	.31
Nos. 25 and 26.	.25	.26	.27	.28	.29	.30	.31	.32	.33
Nos. 27 and 28.	.27	.28	.29	.30	.31	.32	.33	.34	.35
Add 9 cts. for sheets cut to particular widths and lengths.									
Add 1/2 c. for additional on each number thinner than Nos. 25 to 28, inclusive.									
Brass thinner than No. 28 in Platers' Brass.									
at . . . . .									
Printers' rules . . . . .									
Printers' Sheets and Plates cut to particular sizes and lengths to No. 30, inclusive . . . . .									
Brazing, Spinning and Spring Brass, one cent more than common High Brass.									
Low Brass four cts. for sheets cut to particular widths and lengths.									
Gliding, Orpelle and Bronze seven cts. for sheets cut to particular widths and lengths.									

## SLITTING METAL.

Add to list as follows:									
Over 1/2 in. to 3 in., inclusive, Nos. 12 to 30, inclusive.									
Over 1/2 in. to 1/2 in., inclusive, Nos. 12 to 30, inclusive.									
1/2 in. and narrower, not less than . . . . .									
Over 1/2 in. to 2 in., inclusive, Nos. 21 to 28, inclusive.									
Over 1/2 in. to 1/2 in., inclusive, Nos. 21 to 28, inclusive.									
1/2 in. and narrower, Nos. 21 to 28, inclusive, not less than . . . . .									
Over 1/2 in. to 2 in., inclusive, Nos. 29 to 32, inclusive.									
Over 1/2 in. to 1/2 in., inclusive, Nos. 29 to 32, inclusive.									
1/2 in. and narrower, Nos. 29 to 32, inclusive, not less than . . . . .									
Over 1/2 in. to 2 in., inclusive, No. 33 and thinner . . . . .									
Over 1/2 in. to 1/2 in., inclusive, No. 33 and thinner . . . . .									
1/2 in. and narrower, No. 33 and thinner, not less than . . . . .									
Slit Metal cut to particular lengths, for additional . . . . .									

## PLATERS' OR GOLD METAL.

In bars . . . . .	40c.
In ingots . . . . .	42c.
In ingots, planed or polished . . . . .	44c.

## The Thompson Improved Indicator.

By THOS. PRAY, JR., Consulting and Mechanical Engineer.

Nothing is now more essential to the proper operation of a steam engine, if we except, perhaps, a skillful, sober engineer, than an improved indicator; and the engineer himself, however capable he may be as a mechanic, however skillful he may be, works in the dark without this valuable instrument and the proper knowledge of its record made in the diagram.

Originally the indicator was used simply to ascertain the power which was effectively yielded by the steam used in the cylinder and transmitted from the engine itself to the machinery to which it gave motion. But it is not our purpose to note the history of the indicator, as much as to call attention to the splendid instrument which is so fast winning its way with the intelligent and progressive engineers of the country, the officials of the steam bureaus of the various governments, and last, but not least, the engine builders. The makers of this instrument were the first makers, to any extent, of indicators in the United States. For many years they were builders of the Richards indicator, which witnessed one of the greatest transitions in steam power machinery, and was really an effective and important element which led up to the perfection in the slow-moving engines, and brought us along in our progression to a point where higher speed was necessary, and the Richards then gave way to the Thompson.

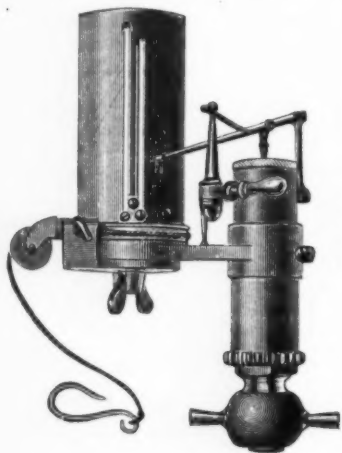


FIG. 1.

This is the third or fourth Thompson indicator; it has been materially changed in its outward appearance, and most materially changed in its construction, adaptation and proportions. We do not hesitate to-day to declare it the most efficient indicator in the world. We have ourselves used it and do use it entirely in our own practice for adjustment of valves, for indication of power, and to ascertain the economy under which any engine or steam motor is working to which it is applicable. One after another improvements have been made to adapt this instrument to the highest speed, and we have recently used it on an Armington & Sims, running at 435 revolutions per minute. Within the last two years the parallel motion has been completely changed over, and all the pieces that compose this delicate recording mechanism have been completely reorganized, by using compressed drop steel forgings made from dies especially for this work by the Billings & Spencer Company, of Hartford, Conn., who make some of the finest pieces of drop forgings in the world. By the use of this compression an elastic and very firm piece of steel is brought out, perfectly reliable, capable of most accurate adjustment, free from wear, and one which will stand any amount of hard service. The pieces are so light that the friction of the instrument is reduced to the very

minimum; at the same time, it is stronger than any parallel motion previously made.

Fig. 1 is the outside or perspective view of the instrument ready for work, showing the paper barrel, parallel motion, cap of the cylinder, ebony handle for handling the pencil, and connection to hold the indicator upon the cock connection with the cylinder, and the new swivel-joint carrier pulley, which is shown a little more than half size in Fig. 3.

Fig. 2 is a sectional view of the indicator, cut down nearly through the centre of the paper cylinder and the steam cylinder, the parallel motion being left intact. This shows the steam way from the engine-

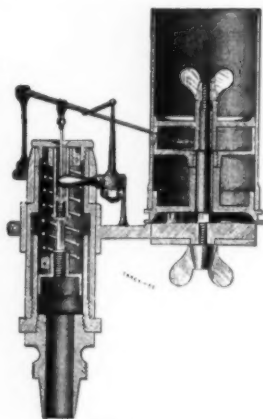


FIG. 2.

cylinder, piston, and the shell of the cylinder in which the piston works, with the spring in position, showing the connection of the piston rod to the piston, the ball and socket joint midway on the length of the piston rod, which connects directly above to the parallel motion or pencil bar. There are some peculiarities about this which may be described by reference to Fig. 2, although we may wish the cut was three times as large. The cap of the steam cylinder screws down into the shell, into the bottom of which the conical connection screws into the top of the indicator cock, which is attached to the cylinder of the engine. A bracket supports the paper cylinder, and is fastened by a clamp screw, seen in Fig. 1, on the back of the steam



FIG. 3.

cylinder, as also in Fig. 2, in the centre of the steam cylinder lengthwise.

A small milled-head screw, not shown plainly in the engraving, connects the top of the piston rod of the steam cylinder to the pencil bar. Now, if we wish to change a spring we have only to remove this milled-head screw from this connection, unscrew the cap just referred to in the top of the steam cylinder casting, lift the parallel motion, cylinder top, piston rod and spring all out, then unscrew the spring from the cap at the top, take the piston out of the spring at the bottom, substitute another spring, put it carefully back, reversing the operation, slip the piston back where it belongs, screw down the cover, put in the milled-head screw,—all of which can be done in less time than we are writing this, say in less than a minute, and we are ready for work again on a different scale.

There is one peculiar feature about the Thompson indicator, to which we must

call the attention of all engineers. The little ebony handle, shown in both cuts, (Fig. 1 and Fig. 2,) runs through the bracket which holds the supporting stand for the parallel lever that connects with the pencil lever; this is threaded; now in use it is our own custom to screw this through the bracket so that the inside end (not shown) strikes against the steel pin, which is shown in both Figs. 1 and 2, enough to hold the pencil away from the paper on the paper barrel. We now connect our cord, and, instead of bringing pressure enough on the pencil bar, we take the ebony handle between the thumb and forefinger, firmly hold in against the post, and with a rolling

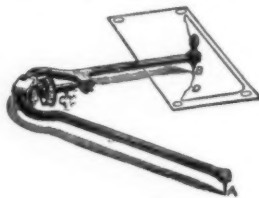


FIG. 4.

motion of the thumb and finger unscrew it until we feel that the pencil point touches the paper and the diagram is taken. Cultivate this and you will soon find it handy. A sudden turn of the hand in a reversed direction takes the pencil from the paper without ever allowing the end of the screw to leave contact with the post. Try this, and you will not have bent pencil bars and unreliable instruments from your own fault.

There is another point about this indicator which was patented in June, 1883. This is the swivel-carrier pulley shown in Fig. 3. In Fig. 1 the pulley is shown looking directly down; in Fig. 3 the pulley is shown at an angle to the vertical line looking up. The little thumb-screw shown in Fig. 3 fits into a slot in the sleeve of the stand, so that it may be revolved in any direction and to any extent. When the cord from the paper cylinder passes through the holes shown in the front of Fig. 3, it can be let off in any direction which you choose by simply swivelling the pulley, and by this attachment (referring again to Fig. 1) and by the thumb-screw directly under the paper barrel, you may swivel the whole stand in Fig. 3 about any



FIG. 5.

portion of a circle you choose, to dodge an obstruction, to run your two indicators on a small engine and yet have the cords kept separate, and then you can turn the little swivel pulley in a plane that is at right angles to the whole stand, anywhere within the 360 degrees of its circuit.—This we have found, in our own practice, to be exceedingly valuable, and lately had an amusing instance of taking off two other indicators which could not possibly indicate the engine with the motion that was attached to it. While upon this point we may say to all owners of the Thompson indicator, that by taking off the old-fashioned double-carrier pulley, and sending the little stand itself to the makers of this instrument by mail, they can receive the same stand as in Fig. 3, at what expense we do not know, so that any Thompson indicator can be readily supplied with this, fitted to perfection, by having the old stand. These points are vital to the user of the indicator, for information, adjustment, power, or otherwise. All instruments now sent out, and for some months

past, have been fitted the same as is shown in Figs. 1 and 3.

Various springs are made by this company so that the range of pressure may be varied anywhere between ten pounds per square inch and 500 pounds per square inch. In speed this instrument stands pre-eminent, and the delicacy of its action such that it is good for every position of valves, with an accuracy that has not yet been surpassed, if equalled, in absolute delineation of the action of steam upon the piston and the valves in relation to the piston. We have ourselves taken diagrams within a few weeks, with a forty-spring, ninety-two pounds of steam, 435 revolutions, which are perfectly elegant in detail, and there is no reason why it shall not reach even the highest speed, for the adjustment of the tension spring of the paper cylinder is far better than any other indicator that we know.

In Fig. 2 is shown a thumb-screw, inside the paper cylinder, which governs the action of a coiled spring, so that by simply taking off the paper cylinder when the instrument is in place you may readily adjust the tension of the spring to any speed you desire to run it, and the moment you are through let the spring down, always having a reliable spring, and we have never been able yet to find distortion in the action of the same. This indicator is now largely adopted by the American navy, English, French and German, and is used solely by many of our engine builders and many of the best practising engineers in the country. But, after we have obtained a diagram and have learned something of its properties, we then require something else, and that is shown in Fig. 4, which may properly be called the American planimeter, also made by the same company. For working up the diagrams accurately it has no equal, either for correctness or time. But our space forbids any extended description of this, beyond the fact that it is just as essential as the indicator itself where much work is to be done, and it is the only thing that is correct so far as we know.

Of late years we hear much of motions with which to transmit a proportionate motion as between the stroke of the engine and the paper cylinder. Figure 5 shows the Corliass lazy tongs, or the pantagraph, with another little adjunct made by the same parties, showing the method of connecting the pantagraph to the engine, whether horizontal, vertical or otherwise. The two pieces shown at the bottom may be run under the set screw that fastens the gib-key, may be connected under the oil cup, or in any other way that is most convenient or accessible, to any engine having less than seven feet stroke. The motion can be taken off thus from the screw shown in the cross-piece, and we have a correct motion for the indicator, if it is correctly applied.

All these articles are manufactured by the American Steam Gauge Company, 35 Char'lon street, Boston, Mass., which also manufactures many other steam appliances, as steam gauges, vacuum gauges, test gauges, pyrometers, salinometers, mercury gauges, and we do not exactly remember all the rest, but if our readers send to that address for a catalogue they will get further particulars, prices, etc., and we can assure them they are dealing with a reliable concern.

When you go to Cincinnati stop at the Palace Hotel. You will find comfortable well-furnished rooms, good meals, polite and accommodating attendants,—everything, in fact, calculated to promote your comfort and make your stay pleasant. It is a new hotel, and everything about it is new, fresh and attractive. The charges are as low as at any other first-class hotel.

If you are not already a subscriber to the *BALTIMORE MANUFACTURERS' RECORD*, send us \$3 and you will receive it regularly for one year or six months for \$1.50.

A CORRESPONDENT of the Philadelphia Press, after reviewing the present condition of the iron trade, says: "All things considered, there is no reason for the existence of further depression. It is not only without parallel in the history of the iron trade, but without any adequate discoverable cause, and it cannot last, simply because under the laws of supply and demand it must be very near its end. This is a fact that anybody can verify who takes the trouble to obtain statistics, and everybody knows who is connected with the iron trade or with the great industries which it directly supplies, that all over the country, shipbuilders, carbuilders, ironfounders and railroad companies are all short of supplies. They must come into the market, and they will just as soon as they are convinced that prices will go no lower. That is what they have been waiting for; convince them of that fact, for it is a fact, and you will see not a boom, but a steady, legitimate, solid improvement."

The tariff scare will no longer hold water; no sensible man has any further apprehensions that the tariff will be further disturbed. So, too, the cry that railroad building has been overdone will not hold good. Every day witnesses the perfection of additional enterprises of great magnitude inviting capital, and certainly there never was a better time to build railroads.

### Important to Southerners.

Persons arriving in New York via Cortlandt Street Ferry, by taking the 6th Avenue Elevated Train, corner Church and Cortlandt streets, can reach the Grand Union Hotel in 42d street, opposite Grand Central Depot, in twenty minutes, and save \$3 carriage hire. If en route to Saratoga or other summer resorts via Grand Central Depot, all baggage will be transferred from hotel to this depot free. 600 elegantly furnished rooms \$1 and upwards per day. Restaurant the best and cheapest in city. Families can live better for less money at this hotel than at any other first-class hotel in the city.

## THE MARKETS.

OFFICE MANUFACTURERS' RECORD,  
BALTIMORE, May 7, 1884.

The general trade of the country continues only moderately fair, with not much prospect for any great activity until after the gathering of the fall crops. Should these be large, as the present outlook indicates, we anticipate a general revival of trade and manufactures.

In manufactured iron there has been some improvement during the week, the amount of business being satisfactory. Values remain low, leaving but slight margin of profit. We quote as before, viz:

Ref. Bar Iron, 1 to 6x1/2 to 1.....	1.90	2 c
" " 1 to 4x1 1/4 to 1.....	1.80	2 c
" " 1/2 to 2, round and square.....	1.90	2 c
Hoop Iron, 1 1/2 wide and upward.....	2.80	3 c
Band Iron, from 1 1/2 to 6 in. wide.....	2 1/4	3.6c
Horseshoe Iron.....	3.30	3.3c
Norway Nail Rods.....	5 1/2	5 1/2c
Black Diamond Cast Steel.....	10 1/2	11 c
Machinery Steel.....	4 1/2	4 1/2c
Spring Steel.....	3 1/2	4 c
Common Horse Nails.....	10 1/2	11 c
Railroad Spikes, 5/8x9-16.....	2.50	2.5c

The demand for pig iron shows no improvement; prices as last quoted, viz:

Baltimore Charcoal Wheel Iron (all Baltimore ore).....	\$23 00	\$23 00
Virginia C. B. Charcoal Wheel Iron.....	28 00	—
Anthracite, No. 1.....	31 00	\$23 00
" " 2.....	30 00	\$21 00
" " 3.....	18 00	\$20 00
Mottled and White.....	16 00	\$17 00

### Philadelphia Iron Market.

PHILADELPHIA, May 5, 1884.

The position of the iron trade has improved considerably since the opening of the month, and it seems as though there would be a decided change for the better after the long dullness of the first four months of the year. There is no improvement in prices, and demand has not assumed heavy proportions by any means,

but there is a little more confidence expressed in the strength of present prices, and the fact is more generally acknowledged that bottom figures have been reached and that it is safe to bring forward the requirements that have been so long withheld. There is considerably more activity of movement, though as a general thing small lots are ordered. Inquiry, however, is active, and the aggregate of business is very encouraging.

Pig iron of good quality is wanted in small lots and quoted prices are paid, but the poorer grades are weak, and prices are likely to decline still further; where the brand is well and favorably known, however, prices are firm, and if demand should improve, as seems probable, slightly better prices may possibly be obtained within the month. Good No. 1 foundry sells mostly at \$20, though the best makes command \$20.50 and \$21; No. 2, \$18.50 to \$19.50. Mill irons are more irregular in price, supplies being larger and the range of qualities wider; \$18 to \$19 was paid for best iron, but there are inferior irons offered on the market and sold at \$17.25 and \$17.50, but there are now comparatively few consumers who want such irons, and they sell slowly.

A large Eastern steel company has been making heavy purchases of domestic and foreign ores at very low prices. Bessemer iron is in light demand and is freely offered at \$23, and would probably be sold at less in large lots. Spiegeleisen is quiet at \$28.50 for 20%. Old rails are dull and quiet; small lots are being taken, but, though large lots are offered at \$22, there are no buyers at that price, though there are those who would purchase at \$21, the figure taken last week.

There is an improvement in the demand for bars, sheet, nails and structural iron, although the demand is almost altogether for small lots. Mills are working a little uller, but on these small orders only, and have but little work assured for the future. Plate iron is quite dull at present. The structural mills are anticipating the placing of a heavy order for bridge iron for the South Pennsylvania Road, which is expected to be given out in a few days.

Steel rails have been selling well during the week, mostly in small lots for summer delivery. Most of the mills are pretty well fixed for summer work, but none of them have the orders they want for fall and winter. Prices are \$33 to \$33.50 for the small business being done, although more favorable terms would be made to a heavy purchaser.

### Cincinnati Iron Market Report.

Specially reported by ROGERS, BROWN & Co.,  
Pig Iron Commission.

CINCINNATI, May 5, 1884.

The pig iron market at this point remains extremely quiet under purchases of the smallest hand-to-mouth character. The light consumption of late would have told seriously upon prices had not the output of furnaces tributary to this district decreased in about an even ratio with the demand. As it is, prices have been sustained remarkably well, showing, however, a weakness as compared with 30 days ago. The feeling of Western and Southern makers is that prices can go no lower without overstepping the line of cost. We quote as follows:

HOT-BLAST FOUNDRY.		
Hanging Rock C. C., No. 1.....	\$21 50	\$23 00
Southern " " 2.....	19 50	\$22 00
Strong Coke, " 1.....	38 50	\$19 25
" " 2.....	17 50	\$18 00
Soft Stone Coal, " 1.....	18 50	\$19 25
" " 2.....	17 00	\$18 25
FORGE.		
Strong Neutral, No. 1 Mill.....	16 00	\$16 50
Cold Short, " 1.....	15 00	\$16 00
CAR WHEEL AND MALLEABLE.		
Hanging Rock C. B.....	30 00	\$31 00
" " W. B.....	30 00	\$34 00
Southern Car-Wheel Iron.....	24 50	\$26 00
Lake Superior " ".....	24 00	\$25 50
" " Malleable.....	24 50	\$26 50

Specially reported by E. L. HARPER & Co.

CINCINNATI, May 5, 1884.

The market continues fairly active, and inquiries are quite numerous. In view of the threatened strike at the rolling mills mill irons are, for the present, comparatively neglected. The foundries generally are not buying liberally, though expectations of a further reduction of prices on standard brands are not indulged. We quote as figures current:

FOUNDRY.		Four Months.	
Hanging Rock Charcoal, No. 1.....	\$22 35	\$23 25	25
" " 2.....	21 25	\$22 25	25
Strong Neutral Coke, " 1.....	18 50	\$19 00	00
" " 2.....	17 50	\$18 00	00
American Scotch " 1.....	18 50	\$19 00	00
GREY FORGE.			
Neutral Coke.....	16 50	\$17 00	00
Cold Short.....	16 25	\$16 75	00
CAR WHEEL AND MALLEABLE.			
Hanging Rock, strictly cold blast.....	—	\$27 25	00
" " warm " ".....	—	24 00	\$24 50
Lake Superior Charcoal, all grades.....	24 00	\$25 00	00
South. Car Wheel, strictly cold blast.....	26 00	\$26 50	00

## HARDWARE.

THERE have been no changes of much importance during the week, the demand being mainly for season goods, though quite active for them, with prices about as before.

Nails are quiet, with demand in this market limited,—prices being \$2.50@2.60, according to quantity.

Oils have weakened in price, and we note a number of changes in quotations since our last issue.

THE attention of our readers is invited to the half-page advertisement of the Wm. Rogers Manufacturing Co., Hartford, Conn. The goods turned out by this company are of the best quality, and every piece of ware bearing their trade-marks is guaranteed. In plated ware it is so easy to practice deception as it is difficult for buyers to detect a good article from the common, that it is very satisfactory to deal with a firm whose goods are known to be of the best quality, just as represented. Hence dealers, as well as the retail buyers, find it advantageous to purchase the ware bearing the well-known trade-marks of this company. Those who want a first-class article should see to it that the goods purchased have the trade-mark of the Wm. Rogers Manufacturing Co.

THE Scott Manufacturing Co. have shipped within the past few days to California several car-loads of Phillips' Patent Fruit Evaporators, Scott's Rotary-Knife Peach Parer, Victor Apple Parer, Corer and Slicer, and other goods made by them.

THE Scott Manufacturing Co. have a resident agent on the Pacific coast, who reports that the prospects of the fruit crop for this year is greater than ever before. This company are now manufacturing the improved Hopper Cherry-Seeder.

THE Walker Horse Shoe Co. report orders coming in from different sections of the country, and have just made some large shipments to California.

### Louisville Iron Market.

Specially reported by GEO. H. HULL & Co., Commission Merchants for the sale of Hot and Cold Blast Pig Iron.

LOUISVILLE, Ky., May 5, 1884.

The market shows very little change; if anything, it is a little stiffer, and furnaces that are making heavy concessions in order to sell, have sold largely, and are now not so anxious to cut prices. We quote for cash in round lots as below:

Pig Iron.	
Southern Coke, No. 1 Foundry.....	\$18 50@19 25
" " 2.....	17 50@18 00
Hanging Rock Coke, No. 1 Foundry.....	19 50@20 50
" " Char'l, " ".....	22 00@23 50
Southern Charcoal, No. 1 Foundry.....	19 00@21 00
Silver Gray, different grades.....	16 00@18 00
Southern Coke, No. 1 Mill, Neutral.....	15 50@16 00
" " 2.....	15 00@15 50
" " 1 Cold Sh't.....	15 00@15 50
Southern Charcoal, No. 1 Mill.....	16 00@18 00
White and Mottled, different grades.....	14 00@14 50
Southern Car Wheel, stand' brands.....	26 00@27 00
" " other brands.....	22 00@24 00
Hanging Rock Cold Blast.....	27 00@28 00
" " Warm.....	21 00@22 00

Specially reported by W. B. BELKNAP & Co., Nails, Wire, Iron, Hardware, Carriage and Wagon Goods.

LOUISVILLE, Ky., May 5, 1884.

Bar iron is certainly dull. Threats of June troubles have fallen flat on the under-ried buyer, and his orders come in slow and unimportant as ever. The proverbial May dullness began in April, the only evidence of forwardness in an otherwise very backward season. The usual rally for the spring trade did not put in its appearance at all. We shall drift along in an apathetic way till the bottom drops out or some effort materialize to reduce production.

Hoops and bands are being cut some to force sales. Buyers are few, and a car-load is as eagerly sought after as a hundred tons formerly.

Sheet.—The confidence that was induced by the mere precedent of advances late in the season seems to have been shaken; and while lots are offered exceptionally low, there are no eager takers. The advance by converted action of the galvanizers is a trifle encouraging.

Nails.—There has been a lull in the demand for nails which two weeks ago was brisk. There is no more talk of a pool, and the postponement of its consideration till next meeting means, we think, a final abandonment of the scheme.

Wire.—The strength of this one article in the list seems to know no diminution. Barbed wire is scarce, and immediate delivery almost out of the question. A scarcity so general and an advance so well maintained has been a surprise both to the trade and the country buyer. The country at large owes surely a debt of gratitude to an invention which is doing so much to save its valuable timber.

General depression in all branches of trade is unmistakable and undeniable. Iron has not shrunk so much as many of the leading securities on the stock list. First-mortgage bonds of certain roads hereabouts, that a year ago brought par, are now begging at 50 cts. Our L. & N., now most economically managed and prospering in all its branches, gauges on the stock list about 46. Locally interest for the past week has centred in the Republican convention, from which the delegates go instructed for Chester A. Arthur.

### Chattanooga Iron Market.

Specially reported by S. B. LOWE.

CHATTANOOGA, TENN., May 5, 1884.

Summer has come at last, with days comfortably warm and nights comfortably cool. Stands of both cotton and corn are good and farmers are now putting in full time in their fields, consequently no trading is being done, while business of all kinds is dull. A feature of much interest to us is almost daily meeting men from the North seeking investments in lands or manufacturing sites. Citico furnace has got up to her full work, but as yet made but little foundry. We make some changes in quotations, viz:

No. 1 Foundry.....	\$17 50	\$18 50
No. 2 Foundry.....	17 00	\$17 50
Gray Forge.....	14 00	\$15 00
Car-Wheel Metal.....	22 00	\$24 00
Nails, car load lots.....	2 50	—
Bar Iron.....	1 85	—
Old Rails.....	20 00	\$21 00
Old Wheels.....	18 00	—
Wrought Scrap, No. 1.....	18 00	—
" " No. 2.....	12 00	—
Spikes (Railroad).....	3 40	—
Splice Bars.....	1 90	—
Light Rails.....	2 15	—
Barbed wire—4-pt. galvanized.....	6 00	—
" " Cambria Link.....	6 00	—

### St. Louis Iron Market.

Specially reported by HOFFER & Co., Pig Iron and Iron Ore, No. 318 Olive Street.

ST. LOUIS, May 5, 1884.

The market, if anything, is weaker than at the time of our last report. We, however, continue our quotations of last week. We quote:

HOT-BLAST CHARCOAL.	
Missouri.....	\$19 00@20 00
Southern.....	20 00@22 00
Ohio.....	24 00@25 00
COKE AND COAL.	
Missouri.....	19 00@20 00
Southern.....	18 50@19 50
Ohio.....	21 00@22 50
MILL IRONS.	
Red Short.....	17 50@18 50
Neutral.....	17 00@18 00
CAR-WHEEL AND MALLEABLE IRON.	
Missouri.....	19 80@21 00
Southern.....	25 00@26 50
Ohio.....	23 00@25 00
Iron, per.	



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The City Council of Fredericksburg, Va., proposes to introduce water into the town. Bids for the contract for constructing the works will be received by the Committee on Water up to 12 o'clock M.,

**MAY 22d, 1884,**

when they will be opened and the contract awarded. The party to whom it is awarded will be required to give bond with approved security for a faithful compliance with the contract. The Committee reserves the right to reject any and all bids. Specifications can be had of the Committee. The work must be commenced by the first day of June, and completed by or before the first day of October, 1884.

S. J. QUINN,  
J. S. KNOX,  
C. E. HUNTER,  
T. McCracken,  
WM. E. BRADLEY,  
Committee on Water.

FREDERICKSBURG, VA., April 29, 1884.

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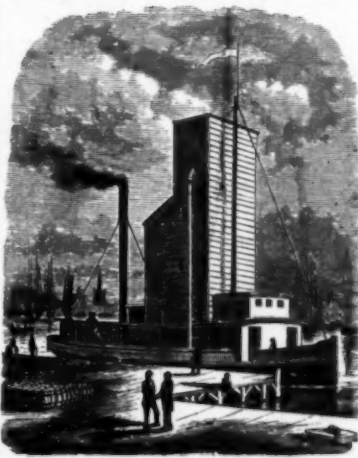
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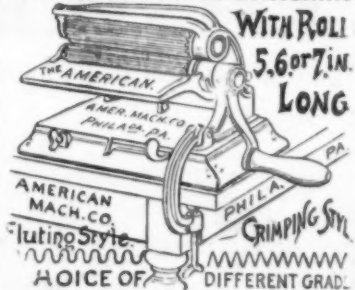
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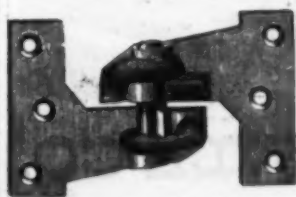
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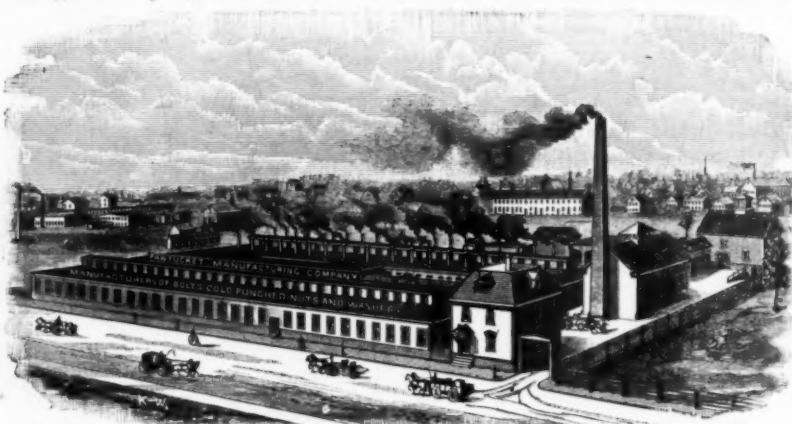
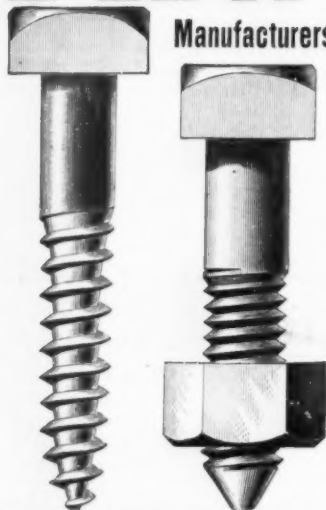
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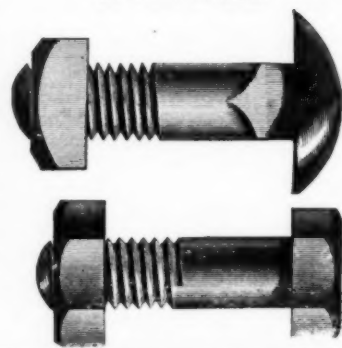
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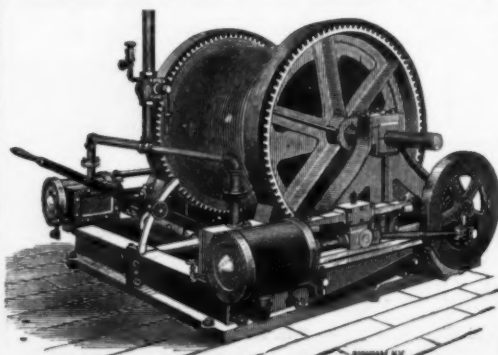
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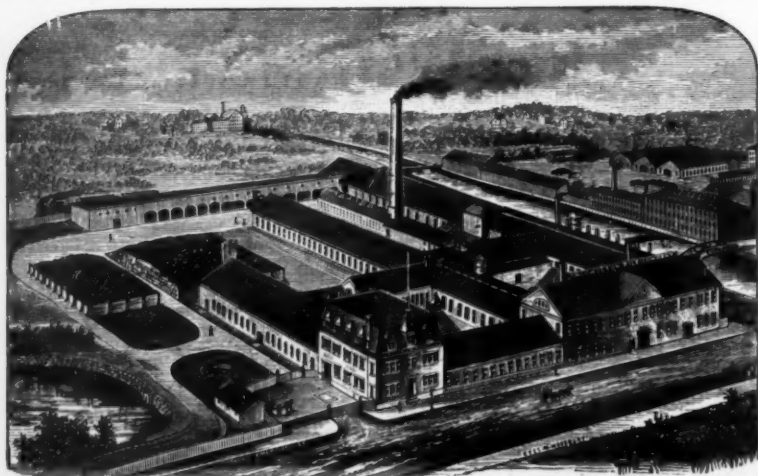
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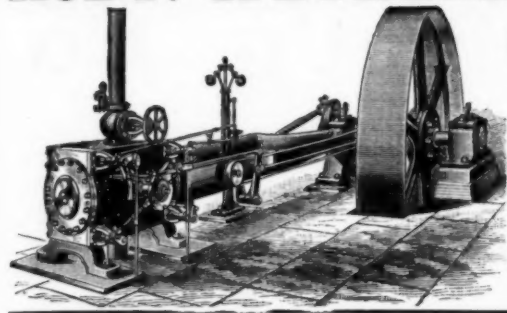
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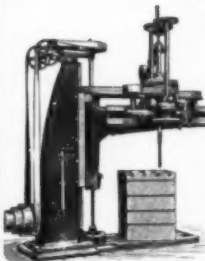
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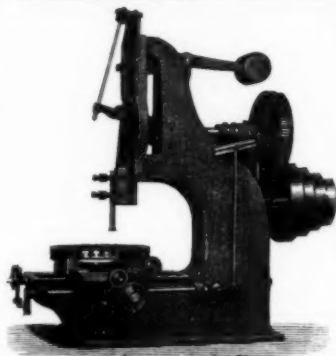
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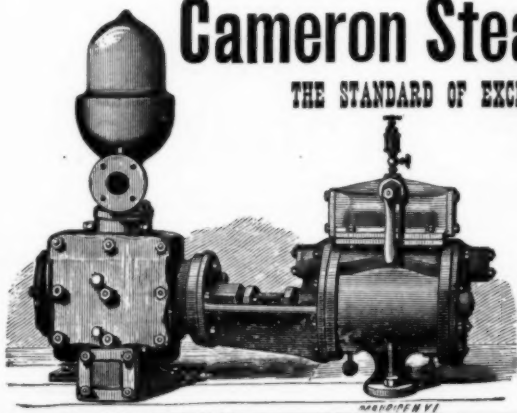
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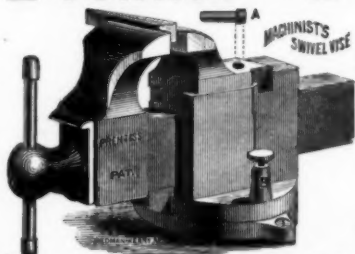
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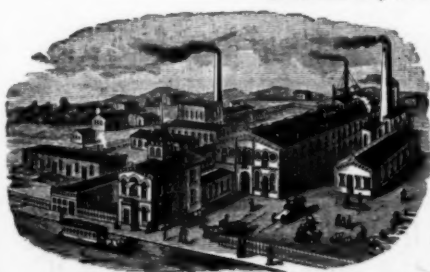
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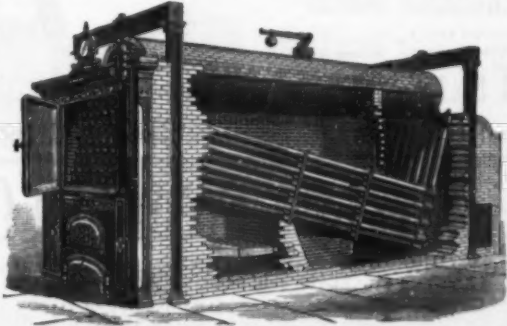
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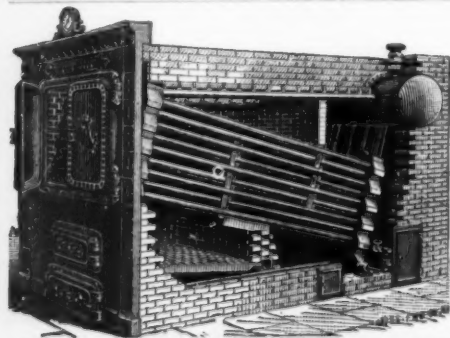
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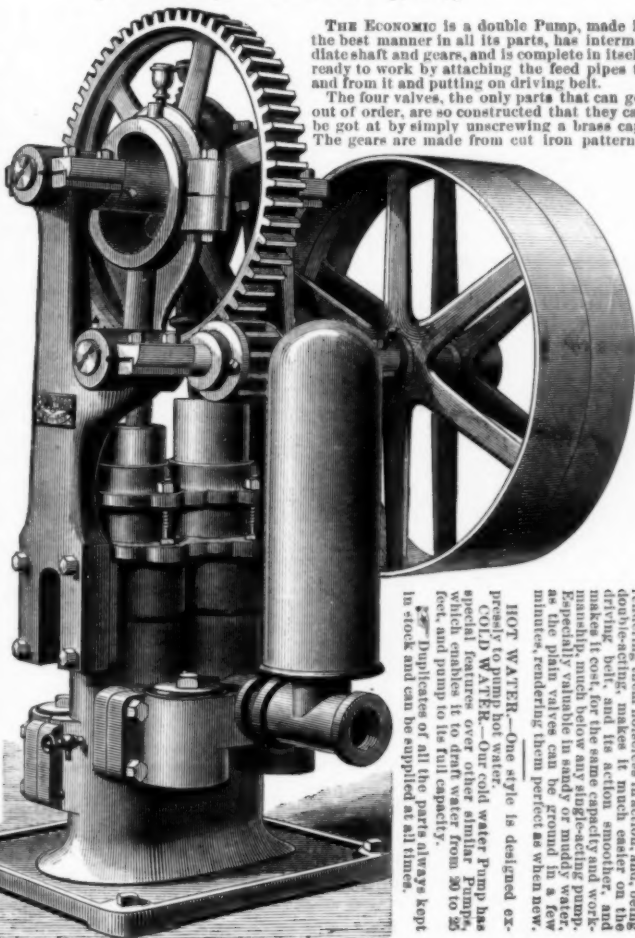
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NOTE.—Every one of our Cold Water Pumps is tested on a lift of 23 feet.  
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THE ECONOMIC is a double Pump, made in the best manner in all its parts, has intermediate shaft and gears, and is complete in itself, ready to work by attaching the feed pipes to and from it and putting on driving belt.

The four valves, the only parts that can get out of order, are so constructed that they can be got at by simply unscrewing a brass cap. The gears are made from cut iron patterns.

rendering them noiseless in action, and being double-acting, makes it much easier on the driving belt, and its action smoother, and makes it cool, for the same capacity and workmanship, much below any single-acting pump. Especially valuable in sandy or muddy water, as the pump valves can be ground in a few minutes, rendering them perfect as when new.

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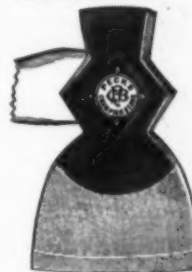


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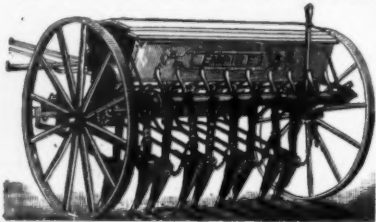


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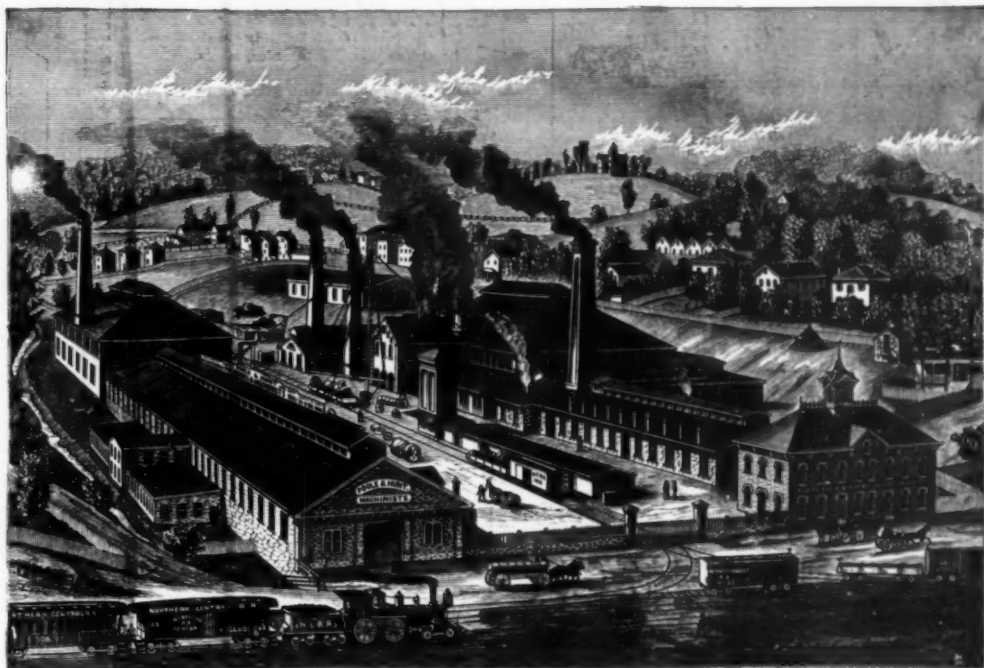
1 Engine Lathe, 10 in. x 3 1/2 ft.  
1 each Engine Lathes, 11 in. x 4 and 5 ft.  
1 " " 13 in. x 5, 6 and 8 ft.  
1 Engine Lathe, 14 in. x 5, 6 and 8 ft.  
1 " " 16 in. x 6 ft.  
1 each Engine Lathes, 16 in. x 6, 7, 8 and 10 ft.  
1 Engine Lathe, 18 in. x 6, 8, 10 and 12 ft.  
1 " " 20 in. x 8, 10, 12, 14 and 16 ft.  
1 " " 22 in. x 8, 10, 12, 14 and 16 ft.  
1 " " 24 in., any length of bed to 30 ft.  
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ESTABLISHED

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# POOLE & HUNT, Founders and Machinists.

Machine  
MOULDED  
MILL  
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Pulleys,  
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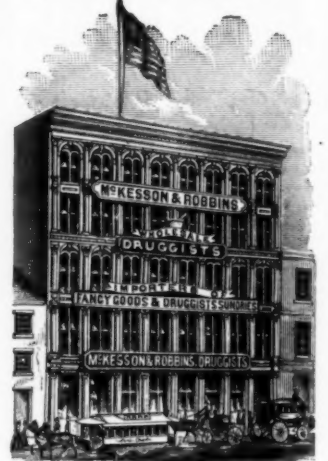
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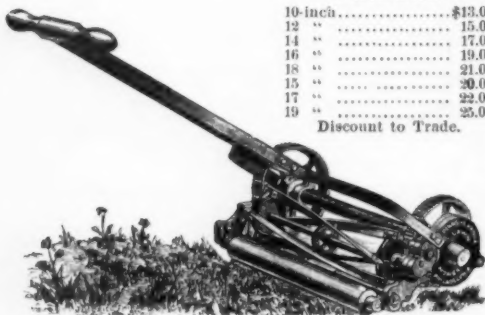
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##### PRICE-LIST.

10-inch.....	\$13.00
12 ".....	15.00
14 ".....	17.00
16 ".....	19.00
18 ".....	21.00
15 ".....	20.00
17 ".....	22.00
19 ".....	25.00

Discount to Trade.



LLOYD, SUPPLEE & WALTON, Philadelphia.  
E. WHITMAN, SONS & Co., Baltimore.

### THE Pennsylvania Lawn Mower.

We defy any one to Produce its Equal.

We have now in our possession a 16-inch Pennsylvania Mower, which was sold to an institute in this State, and was used nearly every working day constantly from the day it was purchased until we got it in our possession. This Mower cut five hundred acres of grass, was sharpened but once during use, and although it has not been sharpened since it came from the ground, nevertheless will cut the finest paper. We now have it in our store on exhibition, and we only secured it by giving a new machine, the parties not wanting to part with it.

### The Quaker City Lawn Mower

This is by no means an inferior Mower because at less list price. The saving in manufacture being because it is a centre cut instead of a rear cut Mower. Particularly adapted for the Southern Trade, and at the price we now offer them parties with the smallest lawns cannot well afford to permit their grass to grow wild, or be ruined by use of grass hook, sickle or scythe.

#### The Quaker City Lawn Mower.

##### REDUCED PRICE.

10-inch.....	\$11.00
12 ".....	13.00
14 ".....	15.00
16 ".....	17.00

Discount to Trade.



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Best Material and Workmanship. Iron Bushings and  
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The Oldest Saw Manufactory in the South.  
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Particular attention paid to Large Circular Work. We warrant our Small Circular Saws to stand more strain, without buckling or cracking, than any other make. We make all kinds of Saws.—Enslage, Feed, Meat Choppers, and other knives made to pattern, warranted equal to the Best Forged Knives, and CHEAPER.

N. B. We make no charge for hammering any Large Circular Saw that we can't make "go."  
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### Special \* Mills

For Bone, Fish-Scrap and other Fertilizing Material.

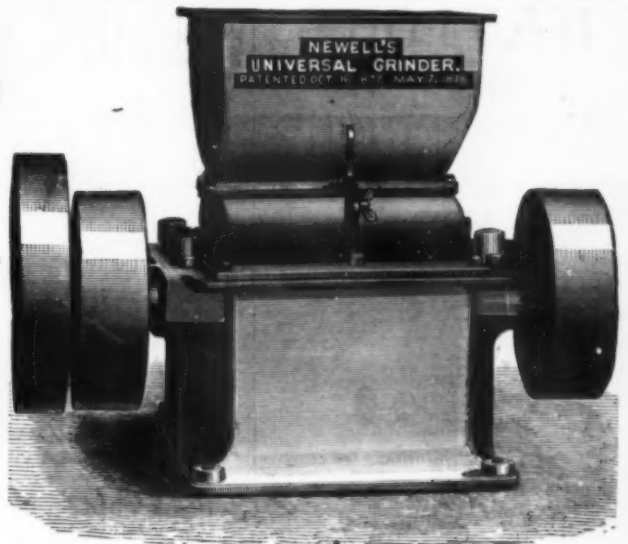
### MILLS FOR GENERAL USE,

In place of the Purr Stone.

### ROTARY

### Hand-Power Rock Drills.

Great Saving in Time and Money.



Also Agents for UNITED STATES and CANADA for ROSE, DOWNS & THOMPSON'S ENGLISH OIL MACHINERY.

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## NEWELL UNIVERSAL MILL CO.

10 Barclay Street, NEW YORK.



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## TRACTION and PORTABLE STEAM ENGINES.

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Power, Light Weight, Economy in Fuel and Water, Efficiency, Simplicity and Durability.

The Traction Engines are furnished with Birdsall's Patent Driving Wheel, which is made expressly for soft or muddy roads; they are warranted to travel and take a load on roads that are too soft to be used by any other traction; are very simple; easily managed; better made and made of better material and decidedly the best finished engine in the market. A prize will be given to every farmer who tries them and does not find by experience that they are not excelled by any and superior to most.



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Power, Light Weight, Economy in Fuel and Water, Efficiency, Simplicity and Durability.

APRON and VIBRATING THRESHING MACHINES, embodying superior points of excellence and merit peculiar to themselves and possessed by none others, are built expressly for heavy work, and have unusually large separating and cleaning capacity; are matchless in strength, beauty of design and finish, and can be operated by any one of ordinary intelligence, owing to their extreme simplicity and solidity; are capable of taking care of all the grain that can be gotten to them, and in a superior manner.

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The Novelty Saw Mill is the only mill in the world built on truck wheels, and is gotten up on entirely different principles from any other. The cutting is done with the under side of the saw and with the grain of the wood instead of against the grain as in all other mills, thus saving largely in power required to drive the saw; they are gotten up expressly for light power, and are warranted to run with from  $\frac{1}{2}$  to  $\frac{1}{4}$  less power than any mill built; a ten-horse engine gives excellent power for them, and will handle the heaviest timber to the best advantage. They can be set up ready for operation while the steam is being raised on the engine; and they will pay the owner on small jobs, owing to their portability, that will not pay on any other mill. They make excellent lumber; are easily managed, and with our Ten-Horse Traction or Portable Engine will cut from 3,000 to 5,000 ft. of lumber per day, according to the size of the logs and skill of the operator.

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**CHEAPEST  
AND BEST  
Cylinder Lubricator  
YET INVENTED.**

Possesses advantages superior to all others. Will feed any clean oil, whether heavy or light.—Can be regulated to feed from 5 to 50 drops per minute. Only one valve to operate and only one connection to make. Cannot clog nor freeze. Every cup tested and guaranteed.  
There is no expense in adopting this cup. No pipes nor valves necessary. It is the simplest cup in the market. There is nothing complicated about it.

**NICE LIGHT CYLINDER OIL,  
50 Cts. per Gallon.**

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Forbes & Curtis' Patent Pipe Cutting and Threading Machine. A boy can cut and thread pipe to 6 inches. Will send one to any responsible person on 10 days trial.  
Medart Patent Wrought Rim Pulleys. The strongest and lightest and best pulleys made.—300 kept in stock.  
Bemis & Call Combined Screw Wrench and Pipe Wrench—a useful tool.  
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Three No. 1 Delamater Steam Pumps—new. One Corn Mill—capacity 6 to 12 bushels an hour. Two Holt's Portable Forges. One hundred Brass Tubes. 1 1/4 inches diameter by 27 1/2 inches long. Three hundred Wrought Rim Pulleys; Holland's Engine and Shafting Cups for Grasse. Holland's Grease—Olive Compound Also Pipe, Tubes, Fittings, Valves and all kinds of Brass Work. Babbitt Metal. Bolts, Lag Screws, Washers and Nuts, Gum and Leather Belting, Sheet Gum and Packings, Set Screws, Wrenches, Emery Wheels, Squirrel Cans, Injectors, Ejectors and Inspirators, Gate Valves, Stocks and Dies, Pipe Cutters, Sledges, Handies, &c. Shovels, Screws, Pulleys, Shaftings, Hangers, &c., &c.

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BUILDERS OF

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Heavy and Light Forging a Specialty.

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The Brilliance of Color and Beauty of Finish of these Signs has never been equalled by any other manufacturer.

Galvanized Iron

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Architectural Sheet Metal Work.

Galvanized Iron Gutters made in lengths of 8 feet without a joint.  
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**GEDDES'S PATENT METALLIC SKYLIGHT,**

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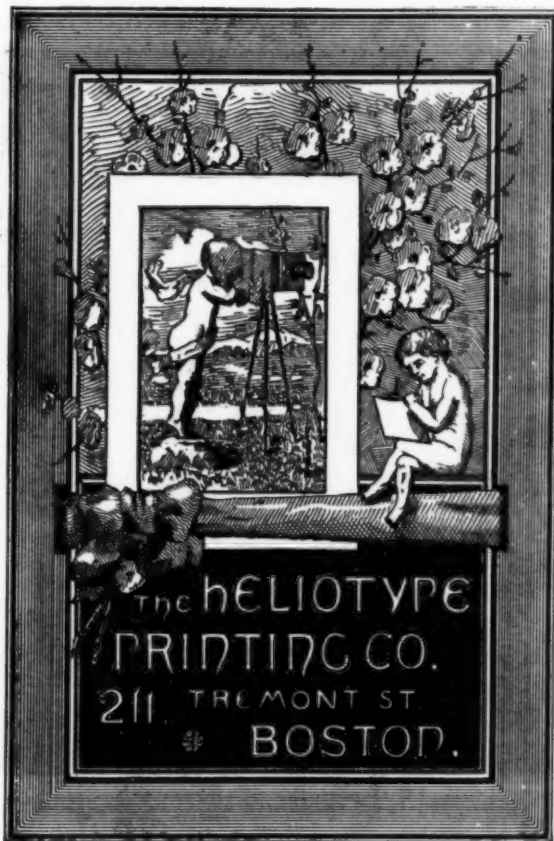
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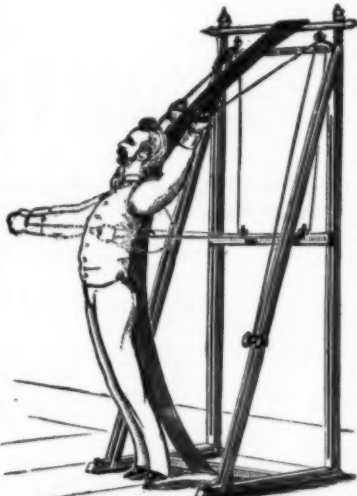
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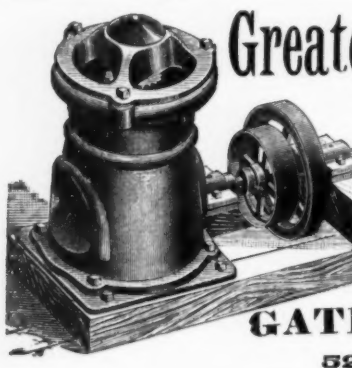
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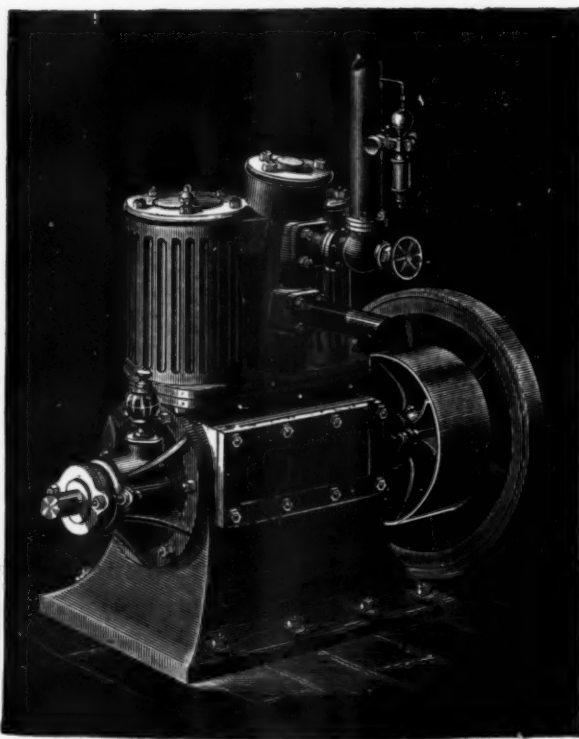
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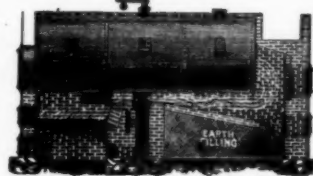
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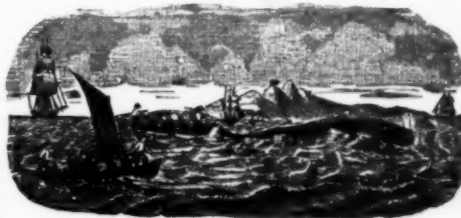
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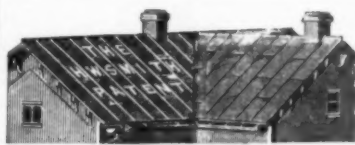
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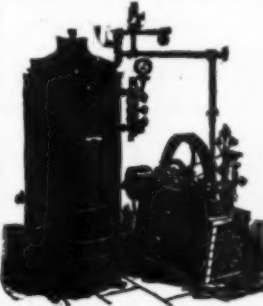
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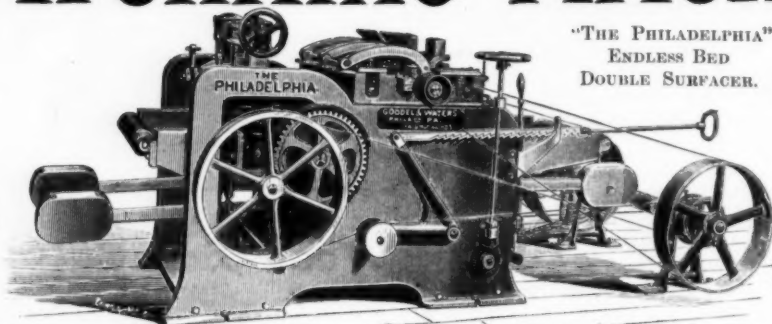
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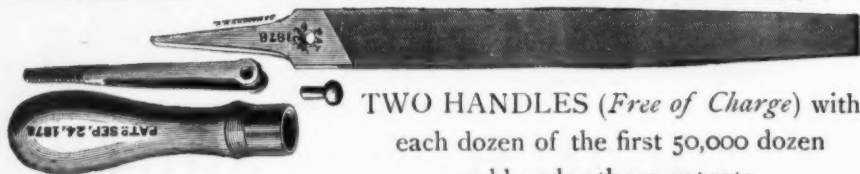
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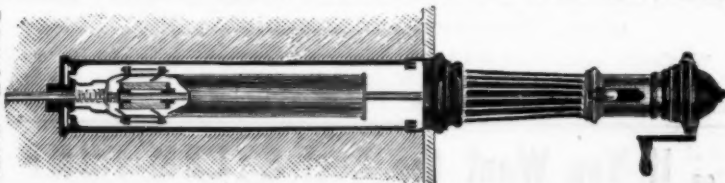
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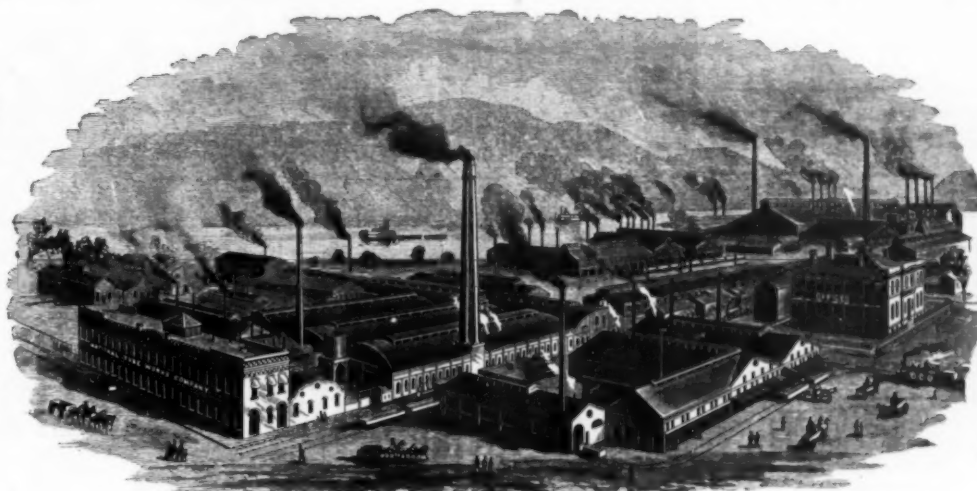
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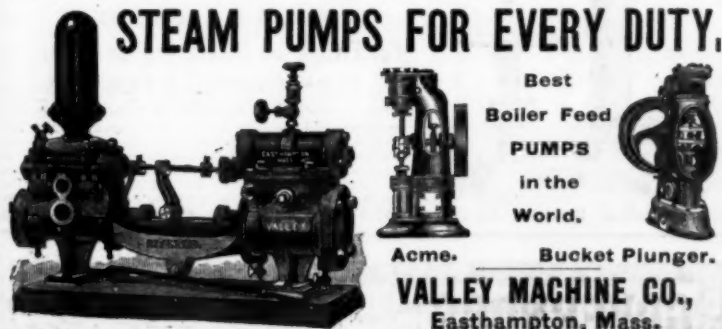
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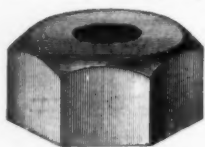
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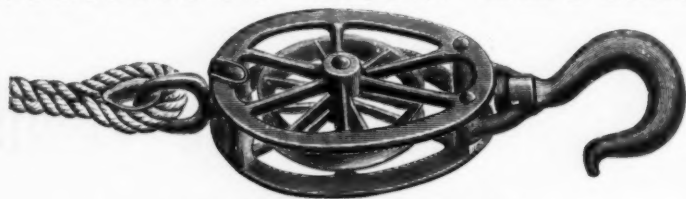
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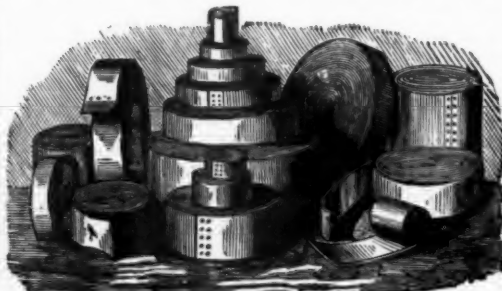
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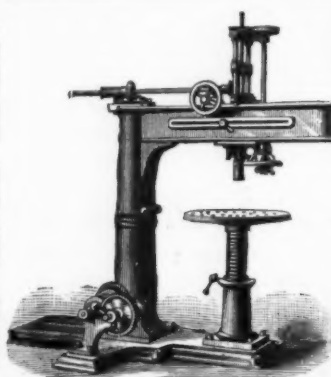
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